ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 19, 2021

Report to:
Holly Beggy
Hudbay Minerals
5255 E Williams Circle
Suite W1065
Tucson, AZ 85711

cc: David Krizek

Bill to:
Lionelyn Garcia
Hudbay Minerals
5255 E Williams Circle
Suite W1065
Tucson, AZ 85711

Project ID:
ACZ Project ID: L66692

Holly Beggy:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 23, 2021. This project has been assigned to ACZ's project number, L66692. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L66692. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 18, 2021. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Hudbay Minerals

July 19, 2021

Project ID:
ACZ Project ID: L66692

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 15 miscellaneous samples from Hudbay Minerals on June 23, 2021. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L66692. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following required further explanation not provided by the Extended Qualifier Report:

1. Copper & Lead, 1312 (B1) - Target analyte detected in prep blank above the method reporting limit. Lead and Copper detected in WG522267PBS and LFB, indicating trace levels of extraction fluid contamination. Samples can be re-extracted and re-digested at client discretion.

2. Copper, 1312 (N1) - Copper detected in WG452267PBS and LFB at nearly exact same elevated result, indicating potential extraction fluid contamination since PBS and LFB are made from same bottle. Samples can be re-digested, or re-extracted and re-digested at client discretion.

Hudbay Minerals
Project ID:
Sample ID: D4A-8

ACZ Sample ID: ***L66692-01***
Date Sampled: *06/07/21 08:52*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/07/21 3:49	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 15:58	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.216	B	*	mg/L	0.05	0.25	07/08/21 1:53	jlw
Aluminum, total (3050)	M6010D ICP	100	5820		*	mg/Kg	5	25	07/15/21 1:44	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/08/21 21:21	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 19:18	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00079	B	*	mg/L	0.0002	0.001	07/08/21 21:21	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.86			mg/Kg	0.1	0.5	07/13/21 19:18	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/08/21 21:21	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.370			mg/Kg	0.025	0.125	07/13/21 19:18	bsu
Calcium (1312)	M6010D ICP	1	15.5			mg/L	0.1	0.5	07/08/21 1:53	jlw
Calcium, total (3050)	M6010D ICP	200	71500		*	mg/Kg	20	100	07/15/21 20:43	kja
Copper (1312)	M6020B ICP-MS	1	0.104		*	mg/L	0.0008	0.002	07/09/21 11:22	bsu
Copper, total (3050)	M6020B ICP-MS	5000	784		*	mg/Kg	4	10	07/14/21 15:22	bsu
Iron (1312)	M6010D ICP	1	0.196		*	mg/L	0.06	0.15	07/08/21 1:53	jlw
Iron, total (3050)	M6010D ICP	100	9510		*	mg/Kg	6	15	07/15/21 1:44	jlw
Lead (1312)	M6020B ICP-MS	1	0.00139		*	mg/L	0.0001	0.0005	07/09/21 11:22	bsu
Lead, total (3050)	M6020B ICP-MS	500	8.52			mg/Kg	0.05	0.25	07/13/21 19:18	bsu
Magnesium (1312)	M6010D ICP	1	0.76	B	*	mg/L	0.2	1	07/08/21 1:53	jlw
Magnesium, total (3050)	M6010D ICP	100	3830			mg/Kg	20	100	07/15/21 1:44	jlw
Manganese (1312)	M6010D ICP	1	0.026	B	*	mg/L	0.01	0.05	07/08/21 1:53	jlw
Manganese, total (3050)	M6010D ICP	200	577		*	mg/Kg	2	10	07/15/21 20:43	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:00	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	11.2	B	*	ng/g	2.69	13.45	07/01/21 12:13	mlh
Molybdenum (1312)	M6010D ICP	1	0.021	B	*	mg/L	0.02	0.1	07/08/21 1:53	jlw
Molybdenum, total (3050)	M6010D ICP	100	6.00	B	*	mg/Kg	2	10	07/15/21 1:44	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/08/21 21:21	bsu
Nickel, total (3050)	M6020B ICP-MS	500	3.27			mg/Kg	0.2	0.5	07/13/21 19:18	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00044		*	mg/L	0.0001	0.00025	07/08/21 21:21	bsu
Selenium, total (3050)	M6020B ICP-MS	500	1.37		*	mg/Kg	0.05	0.125	07/13/21 19:18	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/08/21 21:21	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.0574	B		mg/Kg	0.05	0.25	07/13/21 19:18	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/08/21 1:53	jlw
Zinc, total (3050)	M6010D ICP	100	47.9		*	mg/Kg	2	5	07/15/21 1:44	jlw

Hudbay Minerals
Project ID:
Sample ID: D4A-8

ACZ Sample ID: ***L66692-01***
Date Sampled: *06/07/21 08:52*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	2.5		*	%	0.1	0.5	06/30/21 11:47	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	2.0		*	%	0.1	0.5	06/30/21 11:47	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.5		*	%	0.1	0.5	06/30/21 11:47	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.952		*	mmhos/cm	0.001	0.01	07/15/21 0:00	ms/gkh
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
Temperature		1	22.3		*	C	0.1	0.1	07/15/21 0:00	ms/gkh
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
pH		1	7.5		*	units	0.1	0.1	07/15/21 0:00	ms/gkh
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/25/21 10:00	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.06	B	*	%	0.01	0.1	06/30/21 11:36	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:00	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 10:00	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 10:00	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/12/21 18:25	ms/mlp
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:30	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:30	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 3:52	gkh/zln

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4A-9

ACZ Sample ID: ***L66692-02***
Date Sampled: *06/07/21 09:02*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/07/21 5:32	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 16:23	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.239	B	*	mg/L	0.05	0.25	07/08/21 1:56	jlw
Aluminum, total (3050)	M6010D ICP	101	5390		*	mg/Kg	5.05	25.3	07/15/21 1:56	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/08/21 21:25	bsu
Antimony, total (3050)	M6020B ICP-MS	505	0.316	B	*	mg/Kg	0.202	1.01	07/13/21 19:20	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00080	B	*	mg/L	0.0002	0.001	07/08/21 21:25	bsu
Arsenic, total (3050)	M6020B ICP-MS	505	2.11			mg/Kg	0.101	0.505	07/13/21 19:20	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/08/21 21:25	bsu
Cadmium, total (3050)	M6020B ICP-MS	505	0.376			mg/Kg	0.0253	0.126	07/13/21 19:20	bsu
Calcium (1312)	M6010D ICP	1	13.2			mg/L	0.1	0.5	07/08/21 1:56	jlw
Calcium, total (3050)	M6010D ICP	202	60800		*	mg/Kg	20.2	101	07/15/21 20:54	kja
Copper (1312)	M6020B ICP-MS	1	0.118		*	mg/L	0.0008	0.002	07/09/21 11:24	bsu
Copper, total (3050)	M6020B ICP-MS	5050	789		*	mg/Kg	4.04	10.1	07/14/21 15:24	bsu
Iron (1312)	M6010D ICP	1	0.159		*	mg/L	0.06	0.15	07/08/21 1:56	jlw
Iron, total (3050)	M6010D ICP	101	11700		*	mg/Kg	6.06	15.2	07/15/21 1:56	jlw
Lead (1312)	M6020B ICP-MS	1	0.00101		*	mg/L	0.0001	0.0005	07/09/21 11:24	bsu
Lead, total (3050)	M6020B ICP-MS	505	15.6			mg/Kg	0.0505	0.253	07/13/21 19:20	bsu
Magnesium (1312)	M6010D ICP	1	0.48	B	*	mg/L	0.2	1	07/08/21 1:56	jlw
Magnesium, total (3050)	M6010D ICP	101	3500			mg/Kg	20.2	101	07/15/21 1:56	jlw
Manganese (1312)	M6010D ICP	1	0.022	B	*	mg/L	0.01	0.05	07/08/21 1:56	jlw
Manganese, total (3050)	M6010D ICP	202	573		*	mg/Kg	2.02	10.1	07/15/21 20:54	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:03	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	13.1	B	*	ng/g	2.85	14.25	07/01/21 12:31	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/08/21 1:56	jlw
Molybdenum, total (3050)	M6010D ICP	101	20.0		*	mg/Kg	2.02	10.1	07/15/21 1:56	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00063	B	*	mg/L	0.0004	0.001	07/08/21 21:25	bsu
Nickel, total (3050)	M6020B ICP-MS	505	3.54			mg/Kg	0.202	0.505	07/13/21 19:20	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00046		*	mg/L	0.0001	0.00025	07/08/21 21:25	bsu
Selenium, total (3050)	M6020B ICP-MS	505	0.558		*	mg/Kg	0.0505	0.126	07/13/21 19:20	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/08/21 21:25	bsu
Thallium, total (3050)	M6020B ICP-MS	505	0.0564	B		mg/Kg	0.0505	0.253	07/13/21 19:20	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/08/21 1:56	jlw
Zinc, total (3050)	M6010D ICP	101	61.9		*	mg/Kg	2.02	5.05	07/15/21 1:56	jlw

Hudbay Minerals
Project ID:
Sample ID: D4A-9

ACZ Sample ID: ***L66692-02***
Date Sampled: *06/07/21 09:02*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	2.7		*	%	0.1	0.5	06/30/21 11:56	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	2.2		*	%	0.1	0.5	06/30/21 11:56	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.5		*	%	0.1	0.5	06/30/21 11:56	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.451		*	mmhos/cm	0.001	0.01	07/15/21 0:00	ms/gkh
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
Temperature		1	22.6		*	C	0.1	0.1	07/15/21 0:00	ms/gkh
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
pH		1	7.6		*	units	0.1	0.1	07/15/21 0:00	ms/gkh
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/25/21 14:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.04	B	*	%	0.01	0.1	06/30/21 11:40	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:06	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 11:00	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 11:00	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/12/21 18:27	ms/mlp
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:34	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:34	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 4:46	gkh/zln

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4A-10

ACZ Sample ID: ***L66692-03***
Date Sampled: *06/07/21 09:12*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/07/21 7:14	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 16:47	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.265		*	mg/L	0.05	0.25	07/08/21 2:00	jlw
Aluminum, total (3050)	M6010D ICP	100	4590		*	mg/Kg	5	25	07/15/21 2:00	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/08/21 21:27	bsu
Antimony, total (3050)	M6020B ICP-MS	500	0.252	B	*	mg/Kg	0.2	1	07/13/21 19:22	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00071	B	*	mg/L	0.0002	0.001	07/08/21 21:27	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	2.19			mg/Kg	0.1	0.5	07/13/21 19:22	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/08/21 21:27	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.316			mg/Kg	0.025	0.125	07/13/21 19:22	bsu
Calcium (1312)	M6010D ICP	1	11.2			mg/L	0.1	0.5	07/08/21 2:00	jlw
Calcium, total (3050)	M6010D ICP	500	110000		*	mg/Kg	50	250	07/19/21 1:19	kja
Copper (1312)	M6020B ICP-MS	1	0.0535		*	mg/L	0.0008	0.002	07/09/21 11:26	bsu
Copper, total (3050)	M6020B ICP-MS	2000	475		*	mg/Kg	1.6	4	07/14/21 15:26	bsu
Iron (1312)	M6010D ICP	1	0.131	B	*	mg/L	0.06	0.15	07/08/21 2:00	jlw
Iron, total (3050)	M6010D ICP	100	7300		*	mg/Kg	6	15	07/15/21 2:00	jlw
Lead (1312)	M6020B ICP-MS	1	0.00097		*	mg/L	0.0001	0.0005	07/09/21 11:26	bsu
Lead, total (3050)	M6020B ICP-MS	500	4.16			mg/Kg	0.05	0.25	07/13/21 19:22	bsu
Magnesium (1312)	M6010D ICP	1	0.40	B	*	mg/L	0.2	1	07/08/21 2:00	jlw
Magnesium, total (3050)	M6010D ICP	100	4260			mg/Kg	20	100	07/15/21 2:00	jlw
Manganese (1312)	M6010D ICP	1	0.013	B	*	mg/L	0.01	0.05	07/08/21 2:00	jlw
Manganese, total (3050)	M6010D ICP	200	368		*	mg/Kg	2	10	07/15/21 20:58	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:04	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	11.9	B	*	ng/g	3.43	17.15	07/01/21 12:48	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/08/21 2:00	jlw
Molybdenum, total (3050)	M6010D ICP	100	7.35	B	*	mg/Kg	2	10	07/15/21 2:00	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/08/21 21:27	bsu
Nickel, total (3050)	M6020B ICP-MS	500	4.98			mg/Kg	0.2	0.5	07/13/21 19:22	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00028		*	mg/L	0.0001	0.00025	07/08/21 21:27	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.718		*	mg/Kg	0.05	0.125	07/13/21 19:22	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/08/21 21:27	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 19:22	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/08/21 2:00	jlw
Zinc, total (3050)	M6010D ICP	100	45.1		*	mg/Kg	2	5	07/15/21 2:00	jlw

Hudbay Minerals
Project ID:
Sample ID: D4A-10

ACZ Sample ID: ***L66692-03***
Date Sampled: *06/07/21 09:12*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	3.9		*	%	0.1	0.5	06/30/21 12:05	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	3.3		*	%	0.1	0.5	06/30/21 12:05	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.6		*	%	0.1	0.5	06/30/21 12:05	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.264		*	mmhos/cm	0.001	0.01	07/15/21 0:00	ms/gkh
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
Temperature		1	22.6		*	C	0.1	0.1	07/15/21 0:00	ms/gkh
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
pH		1	7.8		*	units	0.1	0.1	07/15/21 0:00	ms/gkh
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/25/21 19:00	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.04	B	*	%	0.01	0.1	06/30/21 11:43	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:12	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 11:20	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 11:20	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/12/21 18:28	ms/mlp
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:38	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:38	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 5:40	gkh/zln

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4A-11

ACZ Sample ID: ***L66692-04***
Date Sampled: *06/07/21 09:53*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/06/21 10:27	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 11:46	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.148	B	*	mg/L	0.05	0.25	07/07/21 23:05	jlw
Aluminum, total (3050)	M6010D ICP	100	3500		*	mg/Kg	5	25	07/15/21 2:03	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:25	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 19:24	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00070	B	*	mg/L	0.0002	0.001	07/09/21 16:25	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.87			mg/Kg	0.1	0.5	07/13/21 19:24	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:25	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.299			mg/Kg	0.025	0.125	07/13/21 19:24	bsu
Calcium (1312)	M6010D ICP	1	13.5			mg/L	0.1	0.5	07/07/21 23:05	jlw
Calcium, total (3050)	M6010D ICP	500	177000		*	mg/Kg	50	250	07/15/21 21:02	kja
Copper (1312)	M6020B ICP-MS	1	0.0455		*	mg/L	0.0008	0.002	07/09/21 16:25	bsu
Copper, total (3050)	M6020B ICP-MS	2000	367		*	mg/Kg	1.6	4	07/14/21 15:28	bsu
Iron (1312)	M6010D ICP	1	0.085	B	*	mg/L	0.06	0.15	07/07/21 23:05	jlw
Iron, total (3050)	M6010D ICP	100	7120		*	mg/Kg	6	15	07/15/21 2:03	jlw
Lead (1312)	M6020B ICP-MS	1	0.00085		*	mg/L	0.0001	0.0005	07/09/21 16:25	bsu
Lead, total (3050)	M6020B ICP-MS	500	7.39			mg/Kg	0.05	0.25	07/13/21 19:24	bsu
Magnesium (1312)	M6010D ICP	1	0.65	B	*	mg/L	0.2	1	07/07/21 23:05	jlw
Magnesium, total (3050)	M6010D ICP	100	5130			mg/Kg	20	100	07/15/21 2:03	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/07/21 23:05	jlw
Manganese, total (3050)	M6010D ICP	500	354		*	mg/Kg	5	25	07/15/21 21:02	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:06	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	7.66	B	*	ng/g	3.23	16.15	07/01/21 12:57	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:05	jlw
Molybdenum, total (3050)	M6010D ICP	100	7.11	B	*	mg/Kg	2	10	07/15/21 2:03	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00043	B	*	mg/L	0.0004	0.001	07/09/21 16:25	bsu
Nickel, total (3050)	M6020B ICP-MS	500	2.44			mg/Kg	0.2	0.5	07/13/21 19:24	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00019	B	*	mg/L	0.0001	0.00025	07/09/21 16:25	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.290		*	mg/Kg	0.05	0.125	07/13/21 19:24	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:25	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 19:24	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:05	jlw
Zinc, total (3050)	M6010D ICP	100	46.1		*	mg/Kg	2	5	07/15/21 2:03	jlw

Hudbay Minerals
Project ID:
Sample ID: D4A-11

ACZ Sample ID: ***L66692-04***
Date Sampled: *06/07/21 09:53*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	7.3		*	%	0.1	0.5	06/30/21 12:14	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	6.9		*	%	0.1	0.5	06/30/21 12:14	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.4	B	*	%	0.1	0.5	06/30/21 12:14	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.373		*	mmhos/cm	0.001	0.01	07/15/21 0:00	ms/gkh
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
Temperature		1	22.8		*	C	0.1	0.1	07/15/21 0:00	ms/gkh
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	ms/gkh
pH		1	7.7		*	units	0.1	0.1	07/15/21 0:00	ms/gkh
Solids, Percent	D2216-80	1	99.8		*	%	0.1	0.5	06/25/21 23:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.02	B	*	%	0.01	0.1	06/30/21 11:46	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:19	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 11:40	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 11:40	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/12/21 18:30	ms/mlp
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:42	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:42	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 17:07	gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4A-12

ACZ Sample ID: ***L66692-05***
Date Sampled: *06/07/21 09:12*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/06/21 12:03	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 12:56	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.214	B	*	mg/L	0.05	0.25	07/07/21 23:17	jlw
Aluminum, total (3050)	M6010D ICP	100	6480		*	mg/Kg	5	25	07/15/21 2:07	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:26	bsu
Antimony, total (3050)	M6020B ICP-MS	500	0.217	B	*	mg/Kg	0.2	1	07/13/21 19:29	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00069	B	*	mg/L	0.0002	0.001	07/09/21 16:26	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	2.12			mg/Kg	0.1	0.5	07/13/21 19:29	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:26	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.479			mg/Kg	0.025	0.125	07/13/21 19:29	bsu
Calcium (1312)	M6010D ICP	1	11.7			mg/L	0.1	0.5	07/07/21 23:17	jlw
Calcium, total (3050)	M6010D ICP	500	108000		*	mg/Kg	50	250	07/19/21 1:23	kja
Copper (1312)	M6020B ICP-MS	1	0.0779		*	mg/L	0.0008	0.002	07/09/21 16:26	bsu
Copper, total (3050)	M6020B ICP-MS	5000	922		*	mg/Kg	4	10	07/14/21 15:33	bsu
Iron (1312)	M6010D ICP	1	0.137	B	*	mg/L	0.06	0.15	07/07/21 23:17	jlw
Iron, total (3050)	M6010D ICP	100	12700		*	mg/Kg	6	15	07/15/21 2:07	jlw
Lead (1312)	M6020B ICP-MS	1	0.00263		*	mg/L	0.0001	0.0005	07/09/21 16:26	bsu
Lead, total (3050)	M6020B ICP-MS	500	11.8			mg/Kg	0.05	0.25	07/13/21 19:29	bsu
Magnesium (1312)	M6010D ICP	1	0.51	B	*	mg/L	0.2	1	07/07/21 23:17	jlw
Magnesium, total (3050)	M6010D ICP	100	5350			mg/Kg	20	100	07/15/21 2:07	jlw
Manganese (1312)	M6010D ICP	1	0.012	B	*	mg/L	0.01	0.05	07/07/21 23:17	jlw
Manganese, total (3050)	M6010D ICP	200	691		*	mg/Kg	2	10	07/15/21 21:06	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:09	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	5.9	B	*	ng/g	2.99	14.95	07/01/21 13:06	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:17	jlw
Molybdenum, total (3050)	M6010D ICP	100	10.8		*	mg/Kg	2	10	07/15/21 2:07	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:26	bsu
Nickel, total (3050)	M6020B ICP-MS	500	4.17			mg/Kg	0.2	0.5	07/13/21 19:29	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00026		*	mg/L	0.0001	0.00025	07/09/21 16:26	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.340		*	mg/Kg	0.05	0.125	07/13/21 19:29	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:26	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.0619	B		mg/Kg	0.05	0.25	07/13/21 19:29	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:17	jlw
Zinc, total (3050)	M6010D ICP	100	61.4		*	mg/Kg	2	5	07/15/21 2:07	jlw

Hudbay Minerals
Project ID:
Sample ID: D4A-12

ACZ Sample ID: ***L66692-05***
Date Sampled: *06/07/21 09:12*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	4.1		*	%	0.1	0.5	06/30/21 12:22	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	3.5		*	%	0.1	0.5	06/30/21 12:22	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.6		*	%	0.1	0.5	06/30/21 12:22	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.249		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.9		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.7		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/26/21 4:00	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.05	B	*	%	0.01	0.1	06/30/21 11:50	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:25	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 12:00	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 12:00	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:32	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:47	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:47	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 19:27	gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-7

ACZ Sample ID: ***L66692-06***
Date Sampled: *06/07/21 06:34*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/06/21 16:51	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 13:19	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.119	B	*	mg/L	0.05	0.25	07/07/21 23:21	jlw
Aluminum, total (3050)	M6010D ICP	101	9730		*	mg/Kg	5.05	25.3	07/15/21 2:18	jlw
Antimony (1312)	M6020B ICP-MS	1	0.00077	B	*	mg/L	0.0004	0.002	07/09/21 16:32	bsu
Antimony, total (3050)	M6020B ICP-MS	505	0.830	B	*	mg/Kg	0.202	1.01	07/13/21 19:33	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00097	B	*	mg/L	0.0002	0.001	07/09/21 16:32	bsu
Arsenic, total (3050)	M6020B ICP-MS	505	3.43			mg/Kg	0.101	0.505	07/13/21 19:33	bsu
Cadmium (1312)	M6020B ICP-MS	1	0.000061	B	*	mg/L	0.00005	0.00025	07/09/21 16:32	bsu
Cadmium, total (3050)	M6020B ICP-MS	505	2.06			mg/Kg	0.0253	0.126	07/13/21 19:33	bsu
Calcium (1312)	M6010D ICP	1	11.5			mg/L	0.1	0.5	07/07/21 23:21	jlw
Calcium, total (3050)	M6010D ICP	202	57500		*	mg/Kg	20.2	101	07/15/21 21:17	kja
Copper (1312)	M6020B ICP-MS	1	0.147		*	mg/L	0.0008	0.002	07/09/21 16:32	bsu
Copper, total (3050)	M6020B ICP-MS	20200	6100		*	mg/Kg	16.2	40.4	07/14/21 15:35	bsu
Iron (1312)	M6010D ICP	1	0.380		*	mg/L	0.06	0.15	07/07/21 23:21	jlw
Iron, total (3050)	M6010D ICP	101	43100		*	mg/Kg	6.06	15.2	07/15/21 2:18	jlw
Lead (1312)	M6020B ICP-MS	1	0.00140		*	mg/L	0.0001	0.0005	07/09/21 16:32	bsu
Lead, total (3050)	M6020B ICP-MS	505	36.6			mg/Kg	0.0505	0.253	07/13/21 19:33	bsu
Magnesium (1312)	M6010D ICP	1	0.46	B	*	mg/L	0.2	1	07/07/21 23:21	jlw
Magnesium, total (3050)	M6010D ICP	101	4760			mg/Kg	20.2	101	07/15/21 2:18	jlw
Manganese (1312)	M6010D ICP	1	0.036	B	*	mg/L	0.01	0.05	07/07/21 23:21	jlw
Manganese, total (3050)	M6010D ICP	202	2950		*	mg/Kg	2.02	10.1	07/15/21 21:17	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:10	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	48.6		*	ng/g	3.63	18.15	07/01/21 13:22	mlh
Molybdenum (1312)	M6010D ICP	1	0.030	B	*	mg/L	0.02	0.1	07/07/21 23:21	jlw
Molybdenum, total (3050)	M6010D ICP	101	28.9		*	mg/Kg	2.02	10.1	07/15/21 2:18	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:32	bsu
Nickel, total (3050)	M6020B ICP-MS	505	6.68			mg/Kg	0.202	0.505	07/13/21 19:33	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00125		*	mg/L	0.0001	0.00025	07/09/21 16:32	bsu
Selenium, total (3050)	M6020B ICP-MS	505	2.44		*	mg/Kg	0.0505	0.126	07/13/21 19:33	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:32	bsu
Thallium, total (3050)	M6020B ICP-MS	505	0.140	B		mg/Kg	0.0505	0.253	07/13/21 19:33	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:21	jlw
Zinc, total (3050)	M6010D ICP	101	508		*	mg/Kg	2.02	5.05	07/15/21 2:18	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-7

ACZ Sample ID: ***L66692-06***
Date Sampled: *06/07/21 06:34*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.0		*	%	0.1	0.5	06/30/21 12:31	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.7		*	%	0.1	0.5	06/30/21 12:31	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	06/30/21 12:31	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.245		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.7		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.8		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.3		*	%	0.1	0.5	06/26/21 8:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.36		*	%	0.01	0.1	06/30/21 11:53	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:32	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 12:20	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 12:20	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:37	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:51	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:51	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 21:47	gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-8

ACZ Sample ID: ***L66692-07***
Date Sampled: *06/07/21 07:01*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/06/21 18:27	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 13:42	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.180	B	*	mg/L	0.05	0.25	07/07/21 23:25	jlw
Aluminum, total (3050)	M6010D ICP	100	6780		*	mg/Kg	5	25	07/15/21 2:22	jlw
Antimony (1312)	M6020B ICP-MS	1	0.00056	B	*	mg/L	0.0004	0.002	07/09/21 16:37	bsu
Antimony, total (3050)	M6020B ICP-MS	500	0.543	B	*	mg/Kg	0.2	1	07/13/21 19:35	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00132		*	mg/L	0.0002	0.001	07/09/21 16:37	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	3.26			mg/Kg	0.1	0.5	07/13/21 19:35	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:37	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	1.69			mg/Kg	0.025	0.125	07/13/21 19:35	bsu
Calcium (1312)	M6010D ICP	1	9.70			mg/L	0.1	0.5	07/07/21 23:25	jlw
Calcium, total (3050)	M6010D ICP	100	31400		*	mg/Kg	10	50	07/15/21 2:22	jlw
Copper (1312)	M6020B ICP-MS	1	0.0867		*	mg/L	0.0008	0.002	07/09/21 16:37	bsu
Copper, total (3050)	M6020B ICP-MS	5000	2220		*	mg/Kg	4	10	07/14/21 15:39	bsu
Iron (1312)	M6010D ICP	1	0.255		*	mg/L	0.06	0.15	07/07/21 23:25	jlw
Iron, total (3050)	M6010D ICP	100	26400		*	mg/Kg	6	15	07/15/21 2:22	jlw
Lead (1312)	M6020B ICP-MS	1	0.00106		*	mg/L	0.0001	0.0005	07/09/21 16:37	bsu
Lead, total (3050)	M6020B ICP-MS	500	14.8			mg/Kg	0.05	0.25	07/13/21 19:35	bsu
Magnesium (1312)	M6010D ICP	1	0.44	B	*	mg/L	0.2	1	07/07/21 23:25	jlw
Magnesium, total (3050)	M6010D ICP	100	3590			mg/Kg	20	100	07/15/21 2:22	jlw
Manganese (1312)	M6010D ICP	1	0.039	B	*	mg/L	0.01	0.05	07/07/21 23:25	jlw
Manganese, total (3050)	M6010D ICP	100	1100		*	mg/Kg	1	5	07/15/21 21:20	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:11	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	15.4		*	ng/g	3.02	15.1	07/01/21 13:31	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:25	jlw
Molybdenum, total (3050)	M6010D ICP	100	24.9		*	mg/Kg	2	10	07/15/21 2:22	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:37	bsu
Nickel, total (3050)	M6020B ICP-MS	500	4.09			mg/Kg	0.2	0.5	07/13/21 19:35	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00057		*	mg/L	0.0001	0.00025	07/09/21 16:37	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.545		*	mg/Kg	0.05	0.125	07/13/21 19:35	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:37	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.104	B		mg/Kg	0.05	0.25	07/13/21 19:35	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:25	jlw
Zinc, total (3050)	M6010D ICP	100	120		*	mg/Kg	2	5	07/15/21 2:22	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-8

ACZ Sample ID: ***L66692-07***
Date Sampled: *06/07/21 07:01*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.0		*	%	0.1	0.5	06/30/21 12:40	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.7		*	%	0.1	0.5	06/30/21 12:40	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	06/30/21 12:40	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.203		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.6		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.9		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.6		*	%	0.1	0.5	06/26/21 13:00	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.15		*	%	0.01	0.1	06/30/21 11:56	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:38	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 12:40	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 12:40	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:40	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:55	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:55	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 22:34	gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-9

ACZ Sample ID: ***L66692-08***
Date Sampled: *06/07/21 07:22*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/06/21 20:03	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 14:05	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.265		*	mg/L	0.05	0.25	07/07/21 23:33	jlw
Aluminum, total (3050)	M6010D ICP	100	6300		*	mg/Kg	5	25	07/15/21 2:30	jlw
Antimony (1312)	M6020B ICP-MS	1	0.00044	B	*	mg/L	0.0004	0.002	07/09/21 16:41	bsu
Antimony, total (3050)	M6020B ICP-MS	500	0.412	B	*	mg/Kg	0.2	1	07/13/21 19:37	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00114		*	mg/L	0.0002	0.001	07/09/21 16:41	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	3.14			mg/Kg	0.1	0.5	07/13/21 19:37	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:41	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.673			mg/Kg	0.025	0.125	07/13/21 19:37	bsu
Calcium (1312)	M6010D ICP	1	9.23			mg/L	0.1	0.5	07/07/21 23:33	jlw
Calcium, total (3050)	M6010D ICP	100	41000		*	mg/Kg	10	50	07/15/21 2:30	jlw
Copper (1312)	M6020B ICP-MS	1	0.0825		*	mg/L	0.0008	0.002	07/09/21 16:41	bsu
Copper, total (3050)	M6020B ICP-MS	5000	1680		*	mg/Kg	4	10	07/14/21 15:40	bsu
Iron (1312)	M6010D ICP	1	0.334		*	mg/L	0.06	0.15	07/07/21 23:33	jlw
Iron, total (3050)	M6010D ICP	100	26500		*	mg/Kg	6	15	07/15/21 2:30	jlw
Lead (1312)	M6020B ICP-MS	1	0.00124		*	mg/L	0.0001	0.0005	07/09/21 16:41	bsu
Lead, total (3050)	M6020B ICP-MS	500	11.2			mg/Kg	0.05	0.25	07/13/21 19:37	bsu
Magnesium (1312)	M6010D ICP	1	0.43	B	*	mg/L	0.2	1	07/07/21 23:33	jlw
Magnesium, total (3050)	M6010D ICP	100	3040			mg/Kg	20	100	07/15/21 2:30	jlw
Manganese (1312)	M6010D ICP	1	0.037	B	*	mg/L	0.01	0.05	07/07/21 23:33	jlw
Manganese, total (3050)	M6010D ICP	100	1120		*	mg/Kg	1	5	07/15/21 21:28	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:14	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	10.8	B	*	ng/g	3.59	17.95	07/01/21 13:39	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:33	jlw
Molybdenum, total (3050)	M6010D ICP	100	24.9		*	mg/Kg	2	10	07/15/21 2:30	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:41	bsu
Nickel, total (3050)	M6020B ICP-MS	500	4.83			mg/Kg	0.2	0.5	07/13/21 19:37	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00035		*	mg/L	0.0001	0.00025	07/09/21 16:41	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.647		*	mg/Kg	0.05	0.125	07/13/21 19:37	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:41	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.0698	B		mg/Kg	0.05	0.25	07/13/21 19:37	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:33	jlw
Zinc, total (3050)	M6010D ICP	100	157		*	mg/Kg	2	5	07/15/21 2:30	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-9

ACZ Sample ID: ***L66692-08***
Date Sampled: *06/07/21 07:22*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.3		*	%	0.1	0.5	06/30/21 12:49	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.8		*	%	0.1	0.5	06/30/21 12:49	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.5		*	%	0.1	0.5	06/30/21 12:49	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.215		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.4		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.9		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.6		*	%	0.1	0.5	06/26/21 17:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.09	B	*	%	0.01	0.1	06/30/21 12:00	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:45	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 13:00	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 13:00	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:42	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 14:59	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 14:59	jpb
Synthetic Precip. Leaching Procedure	M1312								07/01/21 23:21	gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-10

ACZ Sample ID: ***L66692-09***
Date Sampled: *06/07/21 07:44*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/06/21 21:39	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 14:28	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.181	B	*	mg/L	0.05	0.25	07/07/21 23:44	jlw
Aluminum, total (3050)	M6010D ICP	101	5920		*	mg/Kg	5.05	25.3	07/15/21 2:34	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:43	bsu
Antimony, total (3050)	M6020B ICP-MS	505	0.845	B	*	mg/Kg	0.202	1.01	07/13/21 19:39	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00098	B	*	mg/L	0.0002	0.001	07/09/21 16:43	bsu
Arsenic, total (3050)	M6020B ICP-MS	505	2.60			mg/Kg	0.101	0.505	07/13/21 19:39	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:43	bsu
Cadmium, total (3050)	M6020B ICP-MS	505	0.486			mg/Kg	0.0253	0.126	07/13/21 19:39	bsu
Calcium (1312)	M6010D ICP	1	9.60			mg/L	0.1	0.5	07/07/21 23:44	jlw
Calcium, total (3050)	M6010D ICP	101	17300		*	mg/Kg	10.1	50.5	07/15/21 2:34	jlw
Copper (1312)	M6020B ICP-MS	1	0.0589		*	mg/L	0.0008	0.002	07/09/21 16:43	bsu
Copper, total (3050)	M6020B ICP-MS	5050	1010		*	mg/Kg	4.04	10.1	07/14/21 15:42	bsu
Iron (1312)	M6010D ICP	1	0.200		*	mg/L	0.06	0.15	07/07/21 23:44	jlw
Iron, total (3050)	M6010D ICP	101	16200		*	mg/Kg	6.06	15.2	07/15/21 2:34	jlw
Lead (1312)	M6020B ICP-MS	1	0.00037	B	*	mg/L	0.0001	0.0005	07/09/21 16:43	bsu
Lead, total (3050)	M6020B ICP-MS	505	57.5			mg/Kg	0.0505	0.253	07/13/21 19:39	bsu
Magnesium (1312)	M6010D ICP	1	0.48	B	*	mg/L	0.2	1	07/07/21 23:44	jlw
Magnesium, total (3050)	M6010D ICP	101	2720			mg/Kg	20.2	101	07/15/21 2:34	jlw
Manganese (1312)	M6010D ICP	1	0.014	B	*	mg/L	0.01	0.05	07/07/21 23:44	jlw
Manganese, total (3050)	M6010D ICP	101	767		*	mg/Kg	1.01	5.05	07/15/21 21:32	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:15	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	60		*	ng/g	3.04	15.2	07/01/21 13:48	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:44	jlw
Molybdenum, total (3050)	M6010D ICP	101	46.4		*	mg/Kg	2.02	10.1	07/15/21 2:34	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:43	bsu
Nickel, total (3050)	M6020B ICP-MS	505	4.12			mg/Kg	0.202	0.505	07/13/21 19:39	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00023	B	*	mg/L	0.0001	0.00025	07/09/21 16:43	bsu
Selenium, total (3050)	M6020B ICP-MS	505	0.405		*	mg/Kg	0.0505	0.126	07/13/21 19:39	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:43	bsu
Thallium, total (3050)	M6020B ICP-MS	505	0.0757	B		mg/Kg	0.0505	0.253	07/13/21 19:39	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:44	jlw
Zinc, total (3050)	M6010D ICP	101	88.8		*	mg/Kg	2.02	5.05	07/15/21 2:34	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-10

ACZ Sample ID: ***L66692-09***
Date Sampled: *06/07/21 07:44*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.2		*	%	0.1	0.5	06/30/21 12:58	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.7		*	%	0.1	0.5	06/30/21 12:58	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.5		*	%	0.1	0.5	06/30/21 12:58	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.364		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.3		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.4		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/26/21 22:00	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.03	B	*	%	0.01	0.1	06/30/21 12:03	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:51	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 13:20	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 13:20	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:45	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 15:04	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 15:04	jpb
Synthetic Precip. Leaching Procedure	M1312								07/02/21 0:08	gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-11

ACZ Sample ID: ***L66692-10***
Date Sampled: *06/07/21 08:23*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/06/21 23:15	bsu
Total Hot Plate Digestion	M3010A ICP								07/04/21 14:52	kja

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.295		*	mg/L	0.05	0.25	07/07/21 23:48	jlw
Aluminum, total (3050)	M6010D ICP	100	4020		*	mg/Kg	5	25	07/15/21 2:38	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:45	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 19:41	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00091	B	*	mg/L	0.0002	0.001	07/09/21 16:45	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.30			mg/Kg	0.1	0.5	07/13/21 19:41	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:45	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.302			mg/Kg	0.025	0.125	07/13/21 19:41	bsu
Calcium (1312)	M6010D ICP	1	9.04			mg/L	0.1	0.5	07/07/21 23:48	jlw
Calcium, total (3050)	M6010D ICP	100	9000		*	mg/Kg	10	50	07/15/21 2:38	jlw
Copper (1312)	M6020B ICP-MS	1	0.0846		*	mg/L	0.0008	0.002	07/09/21 16:45	bsu
Copper, total (3050)	M6020B ICP-MS	5000	524		*	mg/Kg	4	10	07/14/21 15:44	bsu
Iron (1312)	M6010D ICP	1	0.344		*	mg/L	0.06	0.15	07/07/21 23:48	jlw
Iron, total (3050)	M6010D ICP	100	12100		*	mg/Kg	6	15	07/15/21 2:38	jlw
Lead (1312)	M6020B ICP-MS	1	0.00079		*	mg/L	0.0001	0.0005	07/09/21 16:45	bsu
Lead, total (3050)	M6020B ICP-MS	500	6.97			mg/Kg	0.05	0.25	07/13/21 19:41	bsu
Magnesium (1312)	M6010D ICP	1	0.68	B	*	mg/L	0.2	1	07/07/21 23:48	jlw
Magnesium, total (3050)	M6010D ICP	100	1730			mg/Kg	20	100	07/15/21 2:38	jlw
Manganese (1312)	M6010D ICP	1	0.027	B	*	mg/L	0.01	0.05	07/07/21 23:48	jlw
Manganese, total (3050)	M6010D ICP	100	338		*	mg/Kg	1	5	07/15/21 21:36	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/13/21 11:16	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	9.49	B	*	ng/g	2.56	12.8	07/01/21 13:57	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:48	jlw
Molybdenum, total (3050)	M6010D ICP	100	16.8		*	mg/Kg	2	10	07/15/21 2:38	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:45	bsu
Nickel, total (3050)	M6020B ICP-MS	500	2.51			mg/Kg	0.2	0.5	07/13/21 19:41	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00023	B	*	mg/L	0.0001	0.00025	07/09/21 16:45	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.329		*	mg/Kg	0.05	0.125	07/13/21 19:41	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:45	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.0691	B		mg/Kg	0.05	0.25	07/13/21 19:41	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:48	jlw
Zinc, total (3050)	M6010D ICP	100	46.4		*	mg/Kg	2	5	07/15/21 2:38	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-11

ACZ Sample ID: ***L66692-10***
Date Sampled: *06/07/21 08:23*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.4		*	%	0.1	0.5	06/30/21 13:06	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.6		*	%	0.1	0.5	06/30/21 13:06	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.8		*	%	0.1	0.5	06/30/21 13:06	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.536		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.3		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.5		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/27/21 2:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.03	B	*	%	0.01	0.1	06/30/21 12:06	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 10:57	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 13:40	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 13:40	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:47	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 15:08	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 15:08	jpb
Synthetic Precip. Leaching Procedure	M1312								07/02/21 0:54	gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-12

ACZ Sample ID: ***L66692-11***
Date Sampled: *06/08/21 05:56*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm
Total Hot Plate Digestion	M3010A ICP								07/08/21 12:23	jlw

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.316		*	mg/L	0.05	0.25	07/12/21 18:32	kja
Aluminum, total (3050)	M6010D ICP	100	2960		*	mg/Kg	5	25	07/15/21 2:41	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 17:48	mfm
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 19:42	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00062	B	*	mg/L	0.0002	0.001	07/12/21 17:48	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	1.38			mg/Kg	0.1	0.5	07/13/21 19:42	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 17:48	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.373			mg/Kg	0.025	0.125	07/13/21 19:42	bsu
Calcium (1312)	M6010D ICP	1	10.9			mg/L	0.1	0.5	07/12/21 18:32	kja
Calcium, total (3050)	M6010D ICP	500	149000		*	mg/Kg	50	250	07/15/21 21:39	kja
Copper (1312)	M6020B ICP-MS	1	0.0202		*	mg/L	0.0008	0.002	07/12/21 17:48	mfm
Copper, total (3050)	M6020B ICP-MS	500	160		*	mg/Kg	0.4	1	07/13/21 19:42	bsu
Iron (1312)	M6010D ICP	1	0.149	B	*	mg/L	0.06	0.15	07/12/21 18:32	kja
Iron, total (3050)	M6010D ICP	100	5200		*	mg/Kg	6	15	07/15/21 2:41	jlw
Lead (1312)	M6020B ICP-MS	1	0.00083		*	mg/L	0.0001	0.0005	07/12/21 17:48	mfm
Lead, total (3050)	M6020B ICP-MS	500	9.20			mg/Kg	0.05	0.25	07/13/21 19:42	bsu
Magnesium (1312)	M6010D ICP	1	0.65	B	*	mg/L	0.2	1	07/12/21 18:32	kja
Magnesium, total (3050)	M6010D ICP	100	2350			mg/Kg	20	100	07/15/21 2:41	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 18:32	kja
Manganese, total (3050)	M6010D ICP	500	293		*	mg/Kg	5	25	07/15/21 21:39	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/16/21 14:04	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	4.9	B	*	ng/g	3.52	17.6	07/01/21 14:05	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 18:32	kja
Molybdenum, total (3050)	M6010D ICP	100	5.88	B	*	mg/Kg	2	10	07/15/21 2:41	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 17:48	mfm
Nickel, total (3050)	M6020B ICP-MS	500	2.52			mg/Kg	0.2	0.5	07/13/21 19:42	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00017	B	*	mg/L	0.0001	0.00025	07/14/21 14:28	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.111	B	*	mg/Kg	0.05	0.125	07/13/21 19:42	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 17:48	mfm
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 19:42	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 18:32	kja
Zinc, total (3050)	M6010D ICP	100	34.5		*	mg/Kg	2	5	07/15/21 2:41	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-12

ACZ Sample ID: ***L66692-11***
Date Sampled: *06/08/21 05:56*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	7.8		*	%	0.1	0.5	06/30/21 13:15	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	7.6		*	%	0.1	0.5	06/30/21 13:15	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	06/30/21 13:15	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.286		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.4		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.7		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.8		*	%	0.1	0.5	06/27/21 7:00	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	06/30/21 12:10	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 11:04	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 14:00	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 14:00	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:50	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 15:12	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 15:12	jpb
Synthetic Precip. Leaching Procedure	M1312								07/06/21 20:08	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-13

ACZ Sample ID: ***L66692-12***
Date Sampled: *06/08/21 06:24*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm
Total Hot Plate Digestion	M3010A ICP								07/08/21 13:10	jlw

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.351		*	mg/L	0.05	0.25	07/12/21 18:39	kja
Aluminum, total (3050)	M6010D ICP	100	3110		*	mg/Kg	5	25	07/15/21 2:45	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 17:51	mfm
Antimony, total (3050)	M6020B ICP-MS	500	0.209	B	*	mg/Kg	0.2	1	07/13/21 19:44	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00075	B	*	mg/L	0.0002	0.001	07/12/21 17:51	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	2.06			mg/Kg	0.1	0.5	07/13/21 19:44	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 17:51	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.276			mg/Kg	0.025	0.125	07/13/21 19:44	bsu
Calcium (1312)	M6010D ICP	1	11.2			mg/L	0.1	0.5	07/12/21 18:39	kja
Calcium, total (3050)	M6010D ICP	200	81900		*	mg/Kg	20	100	07/15/21 21:43	kja
Copper (1312)	M6020B ICP-MS	1	0.0307		*	mg/L	0.0008	0.002	07/12/21 17:51	mfm
Copper, total (3050)	M6020B ICP-MS	2000	346		*	mg/Kg	1.6	4	07/14/21 15:46	bsu
Iron (1312)	M6010D ICP	1	0.174		*	mg/L	0.06	0.15	07/12/21 18:39	kja
Iron, total (3050)	M6010D ICP	100	8330		*	mg/Kg	6	15	07/15/21 2:45	jlw
Lead (1312)	M6020B ICP-MS	1	0.00070		*	mg/L	0.0001	0.0005	07/12/21 17:51	mfm
Lead, total (3050)	M6020B ICP-MS	500	6.45			mg/Kg	0.05	0.25	07/13/21 19:44	bsu
Magnesium (1312)	M6010D ICP	1	0.58	B	*	mg/L	0.2	1	07/12/21 18:39	kja
Magnesium, total (3050)	M6010D ICP	100	1820			mg/Kg	20	100	07/15/21 2:45	jlw
Manganese (1312)	M6010D ICP	1	0.012	B	*	mg/L	0.01	0.05	07/12/21 18:39	kja
Manganese, total (3050)	M6010D ICP	200	274		*	mg/Kg	2	10	07/15/21 21:43	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/16/21 14:06	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	4.02	B	*	ng/g	3.11	15.55	07/01/21 14:14	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 18:39	kja
Molybdenum, total (3050)	M6010D ICP	100	9.35	B	*	mg/Kg	2	10	07/15/21 2:45	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 17:51	mfm
Nickel, total (3050)	M6020B ICP-MS	500	1.99			mg/Kg	0.2	0.5	07/13/21 19:44	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00011	B	*	mg/L	0.0001	0.00025	07/14/21 14:31	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.295		*	mg/Kg	0.05	0.125	07/13/21 19:44	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 17:51	mfm
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 19:44	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 18:39	kja
Zinc, total (3050)	M6010D ICP	100	33.0		*	mg/Kg	2	5	07/15/21 2:45	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-13

ACZ Sample ID: ***L66692-12***
Date Sampled: *06/08/21 06:24*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	6.7		*	%	0.1	0.5	06/30/21 13:33	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	6.4		*	%	0.1	0.5	06/30/21 13:33	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	06/30/21 13:33	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.285		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.4		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.9		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.8		*	%	0.1	0.5	06/27/21 11:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	06/30/21 12:20	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 11:10	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 14:20	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 14:20	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:52	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 15:17	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 15:17	jpb
Synthetic Precip. Leaching Procedure	M1312								07/06/21 22:11	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-14

ACZ Sample ID: ***L66692-13***
Date Sampled: *06/08/21 08:18*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm
Total Hot Plate Digestion	M3010A ICP								07/08/21 14:20	jlw

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.264		*	mg/L	0.05	0.25	07/12/21 18:50	kja
Aluminum, total (3050)	M6010D ICP	100	2930		*	mg/Kg	5	25	07/15/21 2:49	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 17:53	mfm
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 19:46	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00076	B	*	mg/L	0.0002	0.001	07/12/21 17:53	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	0.978			mg/Kg	0.1	0.5	07/13/21 19:46	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 17:53	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.200			mg/Kg	0.025	0.125	07/13/21 19:46	bsu
Calcium (1312)	M6010D ICP	1	11.5			mg/L	0.1	0.5	07/12/21 18:50	kja
Calcium, total (3050)	M6010D ICP	100	43400		*	mg/Kg	10	50	07/15/21 2:49	jlw
Copper (1312)	M6020B ICP-MS	1	0.0266		*	mg/L	0.0008	0.002	07/12/21 17:53	mfm
Copper, total (3050)	M6020B ICP-MS	500	198		*	mg/Kg	0.4	1	07/13/21 19:46	bsu
Iron (1312)	M6010D ICP	1	0.114	B	*	mg/L	0.06	0.15	07/12/21 18:50	kja
Iron, total (3050)	M6010D ICP	100	5380		*	mg/Kg	6	15	07/15/21 2:49	jlw
Lead (1312)	M6020B ICP-MS	1	0.00046	B	*	mg/L	0.0001	0.0005	07/12/21 17:53	mfm
Lead, total (3050)	M6020B ICP-MS	500	5.29			mg/Kg	0.05	0.25	07/13/21 19:46	bsu
Magnesium (1312)	M6010D ICP	1	0.57	B	*	mg/L	0.2	1	07/12/21 18:50	kja
Magnesium, total (3050)	M6010D ICP	100	2060			mg/Kg	20	100	07/15/21 2:49	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 18:50	kja
Manganese, total (3050)	M6010D ICP	100	196		*	mg/Kg	1	5	07/15/21 2:49	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/16/21 14:09	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	4.19	B	*	ng/g	3.29	16.45	07/01/21 14:23	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 18:50	kja
Molybdenum, total (3050)	M6010D ICP	100	8.37	B	*	mg/Kg	2	10	07/15/21 2:49	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00066	B	*	mg/L	0.0004	0.001	07/12/21 17:53	mfm
Nickel, total (3050)	M6020B ICP-MS	500	2.11			mg/Kg	0.2	0.5	07/13/21 19:46	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00014	B	*	mg/L	0.0001	0.00025	07/14/21 14:33	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.192		*	mg/Kg	0.05	0.125	07/13/21 19:46	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 17:53	mfm
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 19:46	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 18:50	kja
Zinc, total (3050)	M6010D ICP	100	30.1		*	mg/Kg	2	5	07/15/21 2:49	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-14

ACZ Sample ID: ***L66692-13***
Date Sampled: *06/08/21 08:18*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	5.7		*	%	0.1	0.5	06/30/21 13:42	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	5.3		*	%	0.1	0.5	06/30/21 13:42	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.4	B	*	%	0.1	0.5	06/30/21 13:42	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.365		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.3		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.6		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.8		*	%	0.1	0.5	06/27/21 20:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	06/30/21 12:23	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 11:17	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 14:40	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 14:40	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:55	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 15:21	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 15:21	jpb
Synthetic Precip. Leaching Procedure	M1312								07/07/21 1:15	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-15

ACZ Sample ID: ***L66692-14***
Date Sampled: *06/08/21 08:42*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm
Total Hot Plate Digestion	M3010A ICP								07/08/21 14:43	jlw

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.347		*	mg/L	0.05	0.25	07/12/21 18:54	kja
Aluminum, total (3050)	M6010D ICP	99	4720		*	mg/Kg	4.95	24.8	07/15/21 2:53	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 17:58	mfm
Antimony, total (3050)	M6020B ICP-MS	495	<0.198	U	*	mg/Kg	0.198	0.99	07/13/21 19:52	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00074	B	*	mg/L	0.0002	0.001	07/12/21 17:58	mfm
Arsenic, total (3050)	M6020B ICP-MS	495	1.73			mg/Kg	0.099	0.495	07/13/21 19:52	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 17:58	mfm
Cadmium, total (3050)	M6020B ICP-MS	495	0.331			mg/Kg	0.0248	0.124	07/13/21 19:52	bsu
Calcium (1312)	M6010D ICP	1	11.4			mg/L	0.1	0.5	07/12/21 18:54	kja
Calcium, total (3050)	M6010D ICP	198	66700		*	mg/Kg	19.8	99	07/15/21 21:47	kja
Copper (1312)	M6020B ICP-MS	1	0.0381		*	mg/L	0.0008	0.002	07/12/21 17:58	mfm
Copper, total (3050)	M6020B ICP-MS	1980	341		*	mg/Kg	1.58	3.96	07/14/21 15:48	bsu
Iron (1312)	M6010D ICP	1	0.197		*	mg/L	0.06	0.15	07/12/21 18:54	kja
Iron, total (3050)	M6010D ICP	99	8130		*	mg/Kg	5.94	14.9	07/15/21 2:53	jlw
Lead (1312)	M6020B ICP-MS	1	0.00064		*	mg/L	0.0001	0.0005	07/12/21 17:58	mfm
Lead, total (3050)	M6020B ICP-MS	495	9.22			mg/Kg	0.0495	0.248	07/13/21 19:52	bsu
Magnesium (1312)	M6010D ICP	1	0.51	B	*	mg/L	0.2	1	07/12/21 18:54	kja
Magnesium, total (3050)	M6010D ICP	99	2550			mg/Kg	19.8	99	07/15/21 2:53	jlw
Manganese (1312)	M6010D ICP	1	0.016	B	*	mg/L	0.01	0.05	07/12/21 18:54	kja
Manganese, total (3050)	M6010D ICP	198	342		*	mg/Kg	1.98	9.9	07/15/21 21:47	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/16/21 14:11	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	6.98	B	*	ng/g	3.43	17.15	07/01/21 14:32	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 18:54	kja
Molybdenum, total (3050)	M6010D ICP	99	8.96	B	*	mg/Kg	1.98	9.9	07/15/21 2:53	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 17:58	mfm
Nickel, total (3050)	M6020B ICP-MS	495	2.50			mg/Kg	0.198	0.495	07/13/21 19:52	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00015	B	*	mg/L	0.0001	0.00025	07/14/21 14:39	mfm
Selenium, total (3050)	M6020B ICP-MS	495	0.209		*	mg/Kg	0.0495	0.124	07/13/21 19:52	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 17:58	mfm
Thallium, total (3050)	M6020B ICP-MS	495	0.0624	B		mg/Kg	0.0495	0.248	07/13/21 19:52	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 18:54	kja
Zinc, total (3050)	M6010D ICP	99	38.8		*	mg/Kg	1.98	4.95	07/15/21 2:53	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-15

ACZ Sample ID: ***L66692-14***
Date Sampled: *06/08/21 08:42*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	4.5		*	%	0.1	0.5	06/30/21 13:51	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	4.2		*	%	0.1	0.5	06/30/21 13:51	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	06/30/21 13:51	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.311		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	23.0		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.7		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.8		*	%	0.1	0.5	06/28/21 1:00	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	06/30/21 12:26	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 11:23	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 15:00	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 15:00	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 16:57	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 15:25	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 15:25	jpb
Synthetic Precip. Leaching Procedure	M1312								07/07/21 5:20	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals
Project ID:
Sample ID: D4B-16

ACZ Sample ID: ***L66692-15***
Date Sampled: *06/08/21 07:44*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm
Total Hot Plate Digestion	M3010A ICP								07/08/21 15:07	jlw

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.399		*	mg/L	0.05	0.25	07/12/21 18:58	kja
Aluminum, total (3050)	M6010D ICP	100	6210		*	mg/Kg	5	25	07/15/21 3:04	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 18:00	mfm
Antimony, total (3050)	M6020B ICP-MS	500	0.436	B	*	mg/Kg	0.2	1	07/13/21 19:57	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00098	B	*	mg/L	0.0002	0.001	07/12/21 18:00	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	2.94			mg/Kg	0.1	0.5	07/13/21 19:57	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 18:00	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.713			mg/Kg	0.025	0.125	07/13/21 19:57	bsu
Calcium (1312)	M6010D ICP	1	9.81			mg/L	0.1	0.5	07/12/21 18:58	kja
Calcium, total (3050)	M6010D ICP	100	23300		*	mg/Kg	10	50	07/15/21 3:04	jlw
Copper (1312)	M6020B ICP-MS	1	0.0775		*	mg/L	0.0008	0.002	07/12/21 18:00	mfm
Copper, total (3050)	M6020B ICP-MS	5000	1290		*	mg/Kg	4	10	07/14/21 15:57	bsu
Iron (1312)	M6010D ICP	1	0.452		*	mg/L	0.06	0.15	07/12/21 18:58	kja
Iron, total (3050)	M6010D ICP	100	20400		*	mg/Kg	6	15	07/15/21 3:04	jlw
Lead (1312)	M6020B ICP-MS	1	0.00096		*	mg/L	0.0001	0.0005	07/12/21 18:00	mfm
Lead, total (3050)	M6020B ICP-MS	500	16.8			mg/Kg	0.05	0.25	07/13/21 19:57	bsu
Magnesium (1312)	M6010D ICP	1	0.53	B	*	mg/L	0.2	1	07/12/21 18:58	kja
Magnesium, total (3050)	M6010D ICP	100	2750			mg/Kg	20	100	07/15/21 3:04	jlw
Manganese (1312)	M6010D ICP	1	0.034	B	*	mg/L	0.01	0.05	07/12/21 18:58	kja
Manganese, total (3050)	M6010D ICP	100	1020		*	mg/Kg	1	5	07/15/21 21:51	kja
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/16/21 14:12	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	6.71	B	*	ng/g	3.16	15.8	07/01/21 14:41	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 18:58	kja
Molybdenum, total (3050)	M6010D ICP	100	35.6		*	mg/Kg	2	10	07/15/21 3:04	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 18:00	mfm
Nickel, total (3050)	M6020B ICP-MS	500	4.60			mg/Kg	0.2	0.5	07/13/21 19:57	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00028		*	mg/L	0.0001	0.00025	07/14/21 14:40	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.778		*	mg/Kg	0.05	0.125	07/13/21 19:57	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 18:00	mfm
Thallium, total (3050)	M6020B ICP-MS	500	0.127	B		mg/Kg	0.05	0.25	07/13/21 19:57	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 18:58	kja
Zinc, total (3050)	M6010D ICP	100	106		*	mg/Kg	2	5	07/15/21 3:04	jlw

Hudbay Minerals
Project ID:
Sample ID: D4B-16

ACZ Sample ID: ***L66692-15***
Date Sampled: *06/08/21 07:44*
Date Received: *06/23/21*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.2		*	%	0.1	0.5	06/30/21 13:59	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.7		*	%	0.1	0.5	06/30/21 13:59	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.5		*	%	0.1	0.5	06/30/21 13:59	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.255		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.9		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.6		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/28/21 5:30	jpb
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.04	B	*	%	0.01	0.1	06/30/21 12:30	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/25/21 11:30	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 16:00	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 16:00	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:00	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/28/21 15:29	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/28/21 15:29	jpb
Synthetic Precip. Leaching Procedure	M1312								07/07/21 6:21	zln/gkh

Arizona license number: AZ0102

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Aluminum (1312) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.002	mg/L	100	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.15	0.15			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.15	0.15			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	1.0013		1.034	mg/L	103	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	1.0013	.148	1.214	mg/L	106	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	1.0013	.148	1.202	mg/L	105	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			.099	.099	mg/L				0	20	RA
WG522593													
WG522593ICV	ICV	07/08/21 0:29	II210620-2	2		1.975	mg/L	99	90	110			
WG522593ICB	ICB	07/08/21 0:33				U	mg/L		-0.15	0.15			
WG522267PBS	PBS	07/08/21 0:56				U	mg/L		-0.15	0.15			
WG522267LFB1	LFB	07/08/21 1:00	II210622-2	1.0013		1.011	mg/L	101	80	120			
L66691-04MS	MS	07/08/21 1:08	II210622-2	1.0013	.392	1.41	mg/L	102	75	125			
L66691-04MSD	MSD	07/08/21 1:11	II210622-2	1.0013	.392	1.471	mg/L	108	75	125	4	20	
L66691-06DUP	DUP	07/08/21 1:23			.433	.508	mg/L				16	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.952	mg/L	98	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.15	0.15			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.15	0.15			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	1.0013		.995	mg/L	99	80	120			
L66692-11DUP	DUP	07/12/21 18:36			.316	.254	mg/L				22	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	1.0013	.351	1.412	mg/L	106	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	1.0013	.351	1.426	mg/L	107	75	125	1	20	

Aluminum, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523112													
WG523112ICV	ICV	07/15/21 1:06	II210712-1	2		1.946	mg/L	97	90	110			
WG523112ICB	ICB	07/15/21 1:10				U	mg/L		-0.15	0.15			
WG522932PBS	PBS	07/15/21 1:33				U	mg/Kg		-15	15			
WG522932LCSS	LCSS	07/15/21 1:37	PCN63584	8130		8562	mg/Kg		3920	12300			
WG522932LCSSD	LCSSD	07/15/21 1:41	PCN63584	8130		8622	mg/Kg		3920	12300	1	20	
L66692-01MS	MS	07/15/21 1:48	II210708-3	100.08	5820	5334	mg/Kg	-486	75	125			M3
L66692-01MSD	MSD	07/15/21 1:52	II210708-3	100.08	5820	6046	mg/Kg	226	75	125	13	20	M3

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Antimony (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522782													
WG522782ICV	ICV	07/08/21 20:43	MS210630-2	.0201		.01994	mg/L	99	90	110			
WG522782ICB	ICB	07/08/21 20:45				U	mg/L		-0.0012	0.0012			
WG522267PBS	PBS	07/08/21 20:55				U	mg/L		-0.0012	0.0012			
WG522267LFB2	LFB	07/08/21 20:57	MS210702-2	.01		.00991	mg/L	99	80	120			
L66691-05MS	MS	07/08/21 21:02	MS210702-2	.01	.00381	.01363	mg/L	98	75	125			
L66691-05MSD	MSD	07/08/21 21:04	MS210702-2	.01	.00381	.01379	mg/L	100	75	125	1	20	
L66691-06DUP	DUP	07/08/21 21:12			.00145	.00108	mg/L				29	20	RA
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.0201		.02021	mg/L	101	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0012	0.0012			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0012	0.0012			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.01		.00958	mg/L	96	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.01	U	.00977	mg/L	98	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.01	U	.00975	mg/L	98	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.0201		.01924	mg/L	96	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0012	0.0012			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0012	0.0012			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.01		.0098	mg/L	98	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	U	mg/L				0	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.01	U	.01001	mg/L	100	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.01	U	.00982	mg/L	98	75	125	2	20	

Antimony, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.0201		.01981	mg/L	99	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.0012	0.0012			
WG522932PBS	PBS	07/13/21 19:13				U	mg/Kg		-0.6	0.6			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	134		87.11289	mg/Kg		4.56	264			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	134		84.29946	mg/Kg		4.56	264	3	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	4.95	U	.95063	mg/Kg	19	75	125			M2
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	4.95	U	.93227	mg/Kg	19	75	125	2	20	M2

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Arsenic (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522782													
WG522782ICV	ICV	07/08/21 20:43	MS210630-2	.05		.05147	mg/L	103	90	110			
WG522782ICB	ICB	07/08/21 20:45				U	mg/L		-0.0006	0.0006			
WG522267PBS	PBS	07/08/21 20:55				U	mg/L		-0.0006	0.0006			
WG522267LFB2	LFB	07/08/21 20:57	MS210702-2	.05005		.05025	mg/L	100	80	120			
L66691-05MS	MS	07/08/21 21:02	MS210702-2	.05005	.00212	.05215	mg/L	100	75	125			
L66691-05MSD	MSD	07/08/21 21:04	MS210702-2	.05005	.00212	.05212	mg/L	100	75	125	0	20	
L66691-06DUP	DUP	07/08/21 21:12			.00127	.00107	mg/L				17	20	RA
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.04945	mg/L	99	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0006	0.0006			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0006	0.0006			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05005		.04711	mg/L	94	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05005	.00069	.04731	mg/L	93	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05005	.00069	.048	mg/L	95	75	125	1	20	
L66693-11DUP	DUP	07/09/21 16:50			.00061	.00059	mg/L				3	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.04873	mg/L	97	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0006	0.0006			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0006	0.0006			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05005		.04626	mg/L	92	80	120			
L66692-11DUP	DUP	07/12/21 17:50			.00062	.00067	mg/L				8	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05005	.00076	.04857	mg/L	96	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05005	.00076	.0482	mg/L	95	75	125	1	20	

Arsenic, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.05		.04888	mg/L	98	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.0006	0.0006			
WG522932PBS	PBS	07/13/21 19:13				U	mg/Kg		-0.3	0.3			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	156		146.72365	mg/Kg		129	183			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	156		141.29825	mg/Kg		129	183	4	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	24.77475	1.73	24.51454	mg/Kg	92	75	125			
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	24.77475	1.73	24.17307	mg/Kg	91	75	125	1	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cadmium (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522782													
WG522782ICV	ICV	07/08/21 20:43	MS210630-2	.05		.050227	mg/L	100	90	110			
WG522782ICB	ICB	07/08/21 20:45				U	mg/L		-0.00015	0.00015			
WG522267PBS	PBS	07/08/21 20:55				U	mg/L		-0.00015	0.00015			
WG522267LFB2	LFB	07/08/21 20:57	MS210702-2	.05005		.0481	mg/L	96	80	120			
L66691-05MS	MS	07/08/21 21:02	MS210702-2	.05005	.000095	.048459	mg/L	97	75	125			
L66691-05MSD	MSD	07/08/21 21:04	MS210702-2	.05005	.000095	.048721	mg/L	97	75	125	1	20	
L66691-06DUP	DUP	07/08/21 21:12			.000091	.000078	mg/L				15	20	RA
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.050499	mg/L	101	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.00015	0.00015			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.00015	0.00015			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05005		.04731	mg/L	95	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05005	U	.046723	mg/L	93	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05005	U	.046674	mg/L	93	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.049226	mg/L	98	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.00015	0.00015			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.00015	0.00015			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05005		.047332	mg/L	95	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	U	mg/L				0	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05005	U	.04775	mg/L	95	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05005	U	.04685	mg/L	94	75	125	2	20	

Cadmium, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.05		.04874	mg/L	97	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.00015	0.00015			
WG522932PBS	PBS	07/13/21 19:13				U	mg/Kg		-0.075	0.075			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	137		125.009272	mg/Kg		113	160			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	137		119.548445	mg/Kg		113	160	4	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	24.77475	.331	22.635976	mg/Kg	90	75	125			
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	24.77475	.331	22.761125	mg/Kg	91	75	125	1	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Calcium (1312) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	100		102.7	mg/L	103	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.3	0.3			
WG522394PBS	PBS	07/07/21 22:58				.1	mg/L		-0.3	0.3			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	67.98753		71.43	mg/L	105	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	67.98753	13.5	85.44	mg/L	106	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	67.98753	13.5	84.62	mg/L	105	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			7.58	7.62	mg/L				1	20	
WG522593													
WG522593ICV	ICV	07/08/21 0:29	II210620-2	100		100.9	mg/L	101	90	110			
WG522593ICB	ICB	07/08/21 0:33				U	mg/L		-0.3	0.3			
WG522267PBS	PBS	07/08/21 0:56				U	mg/L		-0.3	0.3			
WG522267LFB1	LFB	07/08/21 1:00	II210622-2	67.98753		70.09	mg/L	103	80	120			
L66691-04MS	MS	07/08/21 1:08	II210622-2	67.98753	10.6	80.72	mg/L	103	75	125			
L66691-04MSD	MSD	07/08/21 1:11	II210622-2	67.98753	10.6	80.88	mg/L	103	75	125	0	20	
L66691-06DUP	DUP	07/08/21 1:23			9.56	9.79	mg/L				2	20	
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	100		98.66	mg/L	99	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.3	0.3			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.3	0.3			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	67.98753		68.6	mg/L	101	80	120			
L66692-11DUP	DUP	07/12/21 18:36			10.9	11.38	mg/L				4	20	
L66692-12MS	MS	07/12/21 18:43	II210622-2	67.98753	11.2	79.94	mg/L	101	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	67.98753	11.2	80.02	mg/L	101	75	125	0	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Calcium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523112													
WG523112ICV	ICV	07/15/21 1:06	II210712-1	100		100.1	mg/L	100	90	110			
WG523112ICB	ICB	07/15/21 1:10				U	mg/L		-0.3	0.3			
WG522932PBS	PBS	07/15/21 1:33				U	mg/Kg		-30	30			
WG522932LCSS	LCSS	07/15/21 1:37	PCN63584	4760		4524	mg/Kg		3890	5640			
WG522932LCSSD	LCSSD	07/15/21 1:41	PCN63584	4760		4540	mg/Kg		3890	5640	0	20	
L66692-01MS	MS	07/15/21 1:48	II210708-3	6799.734	64700	68810	mg/Kg	60	75	125			M3
L66692-01MSD	MSD	07/15/21 1:52	II210708-3	6799.734	64700	66090	mg/Kg	20	75	125	4	20	M3
WG523296													
WG523296ICV	ICV	07/15/21 20:05	II210712-1	100		99.48	mg/L	99	90	110			
WG523296ICB	ICB	07/15/21 20:08				U	mg/L		-0.3	0.3			
WG522932PBS	PBS	07/15/21 20:32				U	mg/Kg		-30	30			
WG522932LCSS	LCSS	07/15/21 20:36	PCN63584	4760		4511	mg/Kg		3890	5640			
WG522932LCSSD	LCSSD	07/15/21 20:39	PCN63584	4760		4503	mg/Kg		3890	5640	0	20	
L66692-01MS	MS	07/15/21 20:47	II210708-3	13599.468	71500	75480	mg/Kg	29	75	125			M3
L66692-01MSD	MSD	07/15/21 20:50	II210708-3	13599.468	71500	71920	mg/Kg	3	75	125	5	20	M3
WG523454													
WG523454ICV	ICV	07/19/21 0:30	II210712-1	100		99.74	mg/L	100	90	110			
WG523454ICB	ICB	07/19/21 0:33				U	mg/L		-0.3	0.3			
WG522932PBS	PBS	07/19/21 0:57				U	mg/Kg		-30	30			
WG522932LCSS	LCSS	07/19/21 1:01	PCN63584	4760		4543	mg/Kg		3890	5640			
WG522932LCSSD	LCSSD	07/19/21 1:04	PCN63584	4760		4551	mg/Kg		3890	5640	0	20	
L66692-01MS	MS	07/19/21 1:12	II210708-3	6799.734	66000	69160	mg/Kg	46	75	125			M3
L66692-01MSD	MSD	07/19/21 1:15	II210708-3	6799.734	66000	67870	mg/Kg	28	75	125	2	20	M3

Carbon, total (TC) ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522160													
WG522160PBS	PBS	06/30/21 11:30				U	%		-0.3	0.3			
WG522160LCSS	LCSS	06/30/21 11:38	PCN61786	4.35		4.4	%	101	80	120			
L66692-11DUP	DUP	06/30/21 13:24			7.8	7.9	%				1	20	

Carbon, total inorganic (TIC) ASA No. 9 29-2.2.4 (calc TC - TOC)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522160													
WG522160PBS	PBS	06/30/21 11:30				U	%		-0.3	0.3			
L66692-11DUP	DUP	06/30/21 13:24			7.6	7.7	%				1	20	

Carbon, total organic (TOC) ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522160													
WG522160PBS	PBS	06/30/21 11:30				U	%		-0.3	0.3			
L66692-11DUP	DUP	06/30/21 13:24			.2	.2	%				0	20	RA

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523136													
L66691-04DUP	DUP	07/15/21 13:11			.233	.234	mmhos/cm				0	20	
WG523349													
L66692-05DUP	DUP	07/15/21 18:25			.249	.236	mmhos/cm				5	20	

Copper (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522817													
WG522817ICV	ICV	07/09/21 10:20	MS210630-2	.05		.0513	mg/L	103	90	110			
WG522817ICB	ICB	07/09/21 10:22				U	mg/L		-0.0024	0.0024			
WG522152PBS	PBS	07/09/21 10:31				.00196	mg/L		-0.0024	0.0024			
WG522152LFB2	LFB	07/09/21 10:33	MS210702-2	.05		.05085	mg/L	102	80	120			
WG522267PBS	PBS	07/09/21 10:55				.01088	mg/L		-0.0024	0.0024			B1
WG522267LFB2	LFB	07/09/21 10:57	MS210702-2	.05		.06049	mg/L	121	80	120			N1
L66691-05MS	MS	07/09/21 11:02	MS210702-2	.05	.0176	.06484	mg/L	94	75	125			
L66691-05MSD	MSD	07/09/21 11:04	MS210702-2	.05	.0176	.06604	mg/L	97	75	125	2	20	
L66691-06DUP	DUP	07/09/21 11:11			.0152	.01427	mg/L				6	20	
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05117	mg/L	102	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0024	0.0024			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0024	0.0024			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04852	mg/L	97	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	.0779	.1247	mg/L	94	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	.0779	.1262	mg/L	97	75	125	1	20	
L66693-11DUP	DUP	07/09/21 16:50			.00124	.00164	mg/L				28	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.04823	mg/L	96	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0024	0.0024			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0024	0.0024			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05		.04672	mg/L	93	80	120			
L66692-11DUP	DUP	07/12/21 17:50			.0202	.02071	mg/L				2	20	
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05	.0266	.07402	mg/L	95	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05	.0266	.07175	mg/L	90	75	125	3	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Copper, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.05		.04992	mg/L	100	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.0024	0.0024			
WG522932PBS	PBS	07/13/21 19:13				U	mg/Kg		-1.2	1.2			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	54.9		50.46846	mg/Kg		46.1	63.6			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	54.9		48.77154	mg/Kg		46.1	63.6	3	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	24.75	318	248.42665	mg/Kg	-281	75	125			M3
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	24.75	318	296.98435	mg/Kg	-85	75	125	18	20	M3
WG523199													
WG523199ICV	ICV	07/14/21 15:06	MS210630-2	.05		.05212	mg/L	104	90	110			
WG523199ICB	ICB	07/14/21 15:08				U	mg/L		-0.0024	0.0024			
WG522932PBS	PBS	07/14/21 15:17				U	mg/Kg		-1.2	1.2			
WG522932LCSS	LCSS	07/14/21 15:19	PCN63584	54.9		54.68652	mg/Kg		46.1	63.6			
WG522932LCSSD	LCSSD	07/14/21 15:21	PCN63584	54.9		52.23313	mg/Kg		46.1	63.6	5	20	
L66692-14MS	MS	07/14/21 15:50	MS20XSOILS	24.75	341	262.92108	mg/Kg	-315	75	125			M3
L66692-14MSD	MSD	07/14/21 15:55	MS20XSOILS	24.75	341	319.49405	mg/Kg	-87	75	125	19	20	M3

Iron (1312) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.034	mg/L	102	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.18	0.18			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.18	0.18			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	1.0018		1.075	mg/L	107	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	1.0018	.085	1.146	mg/L	106	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	1.0018	.085	1.145	mg/L	106	75	125	0	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522593													
WG522593ICV	ICV	07/08/21 0:29	II210620-2	2		1.994	mg/L	100	90	110			
WG522593ICB	ICB	07/08/21 0:33				U	mg/L		-0.18	0.18			
WG522267PBS	PBS	07/08/21 0:56				U	mg/L		-0.18	0.18			
WG522267LFB1	LFB	07/08/21 1:00	II210622-2	1.0018		1.041	mg/L	104	80	120			
L66691-04MS	MS	07/08/21 1:08	II210622-2	1.0018	.137	1.154	mg/L	102	75	125			
L66691-04MSD	MSD	07/08/21 1:11	II210622-2	1.0018	.137	1.22	mg/L	108	75	125	6	20	
L66691-06DUP	DUP	07/08/21 1:23			.321	.332	mg/L				3	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.952	mg/L	98	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.18	0.18			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.18	0.18			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	1.0018		.995	mg/L	99	80	120			
L66692-11DUP	DUP	07/12/21 18:36			.149	.11	mg/L				30	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	1.0018	.174	1.194	mg/L	102	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	1.0018	.174	1.203	mg/L	103	75	125	1	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Iron, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523112													
WG523112ICV	ICV	07/15/21 1:06	II210712-1	2		2.004	mg/L	100	90	110			
WG523112ICB	ICB	07/15/21 1:10				U	mg/L		-0.18	0.18			
WG522932PBS	PBS	07/15/21 1:33				U	mg/Kg		-18	18			
WG522932LCSS	LCSS	07/15/21 1:37	PCN63584	14100		14120	mg/Kg		8470	19700			
WG522932LCSSD	LCSSD	07/15/21 1:41	PCN63584	14100		14380	mg/Kg		8470	19700	2	20	
L66692-01MS	MS	07/15/21 1:48	II210708-3	100.01	9510	11590	mg/Kg	2080	75	125			M3
L66692-01MSD	MSD	07/15/21 1:52	II210708-3	100.01	9510	11300	mg/Kg	1790	75	125	3	20	M3

Lead (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522817													
WG522817ICV	ICV	07/09/21 10:20	MS210630-2	.05		.04986	mg/L	100	90	110			
WG522817ICB	ICB	07/09/21 10:22				U	mg/L		-0.0003	0.0003			
WG522152PBS	PBS	07/09/21 10:31				.00016	mg/L		-0.0003	0.0003			
WG522152LFB2	LFB	07/09/21 10:33	MS210702-2	.05005		.04656	mg/L	93	80	120			
WG522267PBS	PBS	07/09/21 10:55				.00059	mg/L		-0.0003	0.0003			B1
WG522267LFB2	LFB	07/09/21 10:57	MS210702-2	.05005		.04778	mg/L	95	80	120			
L66691-05MS	MS	07/09/21 11:02	MS210702-2	.05005	.0172	.06338	mg/L	92	75	125			
L66691-05MSD	MSD	07/09/21 11:04	MS210702-2	.05005	.0172	.0643	mg/L	94	75	125	1	20	
L66691-06DUP	DUP	07/09/21 11:11			.00775	.00613	mg/L				23	20	RD
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05017	mg/L	100	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0003	0.0003			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0003	0.0003			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05005		.04729	mg/L	94	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05005	.00263	.04957	mg/L	94	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05005	.00263	.04978	mg/L	94	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.05049	mg/L	101	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0003	0.0003			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0003	0.0003			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05005		.049	mg/L	98	80	120			
L66692-11DUP	DUP	07/12/21 17:50			.00083	.00069	mg/L				18	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05005	.00046	.05058	mg/L	100	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05005	.00046	.04956	mg/L	98	75	125	2	20	

Lead, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.05		.04942	mg/L	99	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.0003	0.0003			
WG522932PBS	PBS	07/13/21 19:13				U	mg/Kg		-0.15	0.15			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	130		121.25137	mg/Kg		107	152			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	130		116.80702	mg/Kg		107	152	4	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	24.77475	9.22	30.40505	mg/Kg	86	75	125			
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	24.77475	9.22	29.34937	mg/Kg	81	75	125	4	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium (1312) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	100		99.59	mg/L	100	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.6	0.6			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.6	0.6			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	50.00302		50.31	mg/L	101	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	50.00302	.65	50.82	mg/L	100	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	50.00302	.65	50.58	mg/L	100	75	125	0	20	
L66693-11DUP	DUP	07/08/21 0:00			.59	.56	mg/L				5	20	RA
WG522593													
WG522593ICV	ICV	07/08/21 0:29	II210620-2	100		98.25	mg/L	98	90	110			
WG522593ICB	ICB	07/08/21 0:33				U	mg/L		-0.6	0.6			
WG522267PBS	PBS	07/08/21 0:56				U	mg/L		-0.6	0.6			
WG522267LFB1	LFB	07/08/21 1:00	II210622-2	50.00302		49.94	mg/L	100	80	120			
L66691-04MS	MS	07/08/21 1:08	II210622-2	50.00302	.46	50.22	mg/L	100	75	125			
L66691-04MSD	MSD	07/08/21 1:11	II210622-2	50.00302	.46	50.5	mg/L	100	75	125	1	20	
L66691-06DUP	DUP	07/08/21 1:23			.79	.72	mg/L				9	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	100		95.04	mg/L	95	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.6	0.6			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.6	0.6			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	50.00302		48.37	mg/L	97	80	120			
L66692-11DUP	DUP	07/12/21 18:36			.65	.68	mg/L				5	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	50.00302	.58	48.86	mg/L	97	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	50.00302	.58	48.85	mg/L	97	75	125	0	20	

Magnesium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523112													
WG523112ICV	ICV	07/15/21 1:06	II210712-1	100		97.31	mg/L	97	90	110			
WG523112ICB	ICB	07/15/21 1:10				U	mg/L		-0.6	0.6			
WG522932PBS	PBS	07/15/21 1:33				U	mg/Kg		-60	60			
WG522932LCSS	LCSS	07/15/21 1:37	PCN63584	2320		2270	mg/Kg		1760	2880			
WG522932LCSSD	LCSSD	07/15/21 1:41	PCN63584	2320		2295	mg/Kg		1760	2880	1	20	
L66692-01MS	MS	07/15/21 1:48	II210708-3	5000.074	3830	10030	mg/Kg	124	75	125			
L66692-01MSD	MSD	07/15/21 1:52	II210708-3	5000.074	3830	8509	mg/Kg	94	75	125	16	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Manganese (1312) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.009	mg/L	100	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.03	0.03			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.03	0.03			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	.5005		.51	mg/L	102	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	.5005	U	.51	mg/L	102	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	.5005	U	.508	mg/L	101	75	125	0	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522593													
WG522593ICV	ICV	07/08/21 0:29	II210620-2	2		1.959	mg/L	98	90	110			
WG522593ICB	ICB	07/08/21 0:33				U	mg/L		-0.03	0.03			
WG522267PBS	PBS	07/08/21 0:56				U	mg/L		-0.03	0.03			
WG522267LFB1	LFB	07/08/21 1:00	II210622-2	.5005		.484	mg/L	97	80	120			
L66691-04MS	MS	07/08/21 1:08	II210622-2	.5005	U	.504	mg/L	101	75	125			
L66691-04MSD	MSD	07/08/21 1:11	II210622-2	.5005	U	.503	mg/L	100	75	125	0	20	
L66691-06DUP	DUP	07/08/21 1:23			.012	.012	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.931	mg/L	97	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.03	0.03			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.03	0.03			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	.5005		.488	mg/L	98	80	120			
L66692-11DUP	DUP	07/12/21 18:36			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	.5005	.012	.502	mg/L	98	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	.5005	.012	.505	mg/L	99	75	125	1	20	

Manganese, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523112													
WG523112ICV	ICV	07/15/21 1:06	II210712-1	2		1.948	mg/L	97	90	110			
WG523112ICB	ICB	07/15/21 1:10				U	mg/L		-0.03	0.03			
WG522932PBS	PBS	07/15/21 1:33				U	mg/Kg		-3	3			
WG522932LCSS	LCSS	07/15/21 1:37	PCN63584	269		252	mg/Kg		221	317			
WG522932LCSSD	LCSSD	07/15/21 1:41	PCN63584	269		252.3	mg/Kg		221	317	0	20	
L66692-01MS	MS	07/15/21 1:48	II210708-3	50.05	532	766.7	mg/Kg	469	75	125			M3
L66692-01MSD	MSD	07/15/21 1:52	II210708-3	50.05	532	904.7	mg/Kg	745	75	125	17	20	M3
WG523296													
WG523296ICV	ICV	07/15/21 20:05	II210712-1	2		1.902	mg/L	95	90	110			
WG523296ICB	ICB	07/15/21 20:08				U	mg/L		-0.03	0.03			
WG522932PBS	PBS	07/15/21 20:32				U	mg/Kg		-3	3			
WG522932LCSS	LCSS	07/15/21 20:36	PCN63584	269		250.4	mg/Kg		221	317			
WG522932LCSSD	LCSSD	07/15/21 20:39	PCN63584	269		248.9	mg/Kg		221	317	1	20	
L66692-01MS	MS	07/15/21 20:47	II210708-3	100.1	577	832	mg/Kg	255	75	125			M3
L66692-01MSD	MSD	07/15/21 20:50	II210708-3	100.1	577	957.2	mg/Kg	380	75	125	14	20	M3

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Mercury (1312) M7470A CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522977													
WG522977ICV	ICV	07/13/21 9:17	HG210701-3	.00501		.00482	mg/L	96	90	110			
WG522977ICB	ICB	07/13/21 9:18				U	mg/L		-0.0006	0.0006			
WG522985													
WG522985LFB	LFB	07/13/21 10:52	HG210709-9	.002002		.00185	mg/L	92	85	115			
WG522267PBS	PBS	07/13/21 10:53				U	mg/L		-0.0006	0.0006			
WG522267LFB1	LFB	07/13/21 10:54	HG210709-9	.002002		.00182	mg/L	91	85	115			
L66691-04MS	MS	07/13/21 10:56	HG210709-9	.002002	U	.00193	mg/L	96	85	115			
L66691-04MSD	MSD	07/13/21 10:57	HG210709-9	.002002	U	.00195	mg/L	97	85	115	1	20	
L66691-06DUP	DUP	07/13/21 10:59			U	U	mg/L				0	20	RA
WG522394LFB1	LFB	07/13/21 11:05	HG210709-9	.002002		.00181	mg/L	90	85	115			
WG522394PBS	PBS	07/13/21 11:05				U	mg/L		-0.0006	0.0006			
L66692-04MS	MS	07/13/21 11:07	HG210709-9	.002002	U	.00185	mg/L	92	85	115			
L66692-04MSD	MSD	07/13/21 11:08	HG210709-9	.002002	U	.00203	mg/L	101	85	115	9	20	
L66693-11DUP	DUP	07/13/21 11:18			U	U	mg/L				0	20	RA
WG522409PBS	PBS	07/13/21 11:19				U	mg/L		-0.0006	0.0006			
WG522409LFB1	LFB	07/13/21 11:20	HG210709-9	.002002		.00195	mg/L	97	85	115			
L66692-11DUP	DUP	07/13/21 11:22			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/13/21 11:25	HG210709-9	.002002	U	.00215	mg/L	107	85	115			
WG523379													
WG523379ICV	ICV	07/16/21 12:21	HG210701-3	.00501		.00512	mg/L	102	95	105			
WG523379ICB	ICB	07/16/21 12:22				U	mg/L		-0.0002	0.0002			
WG523377													
WG523377LFB	LFB	07/16/21 14:01	HG210709-9	.002002		.0017	mg/L	85	85	115			
WG522409PBS	PBS	07/16/21 14:02				U	mg/L		-0.0006	0.0006			
L66692-11DUP	DUP	07/16/21 14:05			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/16/21 14:07	HG210709-9	.002002	U	.00187	mg/L	93	85	115			
L66692-12MSD	MSD	07/16/21 14:08	HG210709-9	.002002	U	.00192	mg/L	96	85	115	3	20	
WG522409LFB1	LFB	07/16/21 14:34	HG210709-9	.002002		.00189	mg/L	94	85	115			

Mercury by Direct Combustion AA M7473 CVAAS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG520390													
WG520390ICV4	ICV	06/04/21 12:43	HG210603-2	10000		10200	ng/g	102	90	110			
WG522321													
WG522321ICV1	ICV	07/01/21 10:22	HG210603-4	100		105	ng/g	105	90	110			
WG522321ICV3	ICV	07/01/21 10:36	HG210603-3	1000		1010	ng/g	101	90	110			
WG522321ICV2	ICV	07/01/21 10:59	HG210603-4	100		90.3	ng/g	90	90	110			
WG522321ICV4	ICV	07/01/21 11:29	HG210603-2	10000		10300	ng/g	103	90	110			
WG522321PBS	PBS	07/01/21 11:47				U	ng/g		-4.71	4.71			
WG522321LCSS	LCSS	07/01/21 11:56	PCN60050	90		80.4	ng/g		80	120			
WG522321LCSSD	LCSSD	07/01/21 12:05	PCN60050	90		87.3	ng/g		80	120	8	20	
L66692-01MS	MS	07/01/21 12:22	HG210603-3				ng/g	85	80	120			
L66692-02DUP	DUP	07/01/21 12:39			13.1	13	ng/g				1	20	RA

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Molybdenum (1312) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.077	mg/L	104	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.06	0.06			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.06	0.06			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	.501		.511	mg/L	102	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	.501	U	.517	mg/L	103	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	.501	U	.512	mg/L	102	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522593													
WG522593ICV	ICV	07/08/21 0:29	II210620-2	2		2.017	mg/L	101	90	110			
WG522593ICB	ICB	07/08/21 0:33				U	mg/L		-0.06	0.06			
WG522267PBS	PBS	07/08/21 0:56				U	mg/L		-0.06	0.06			
WG522267LFB1	LFB	07/08/21 1:00	II210622-2	.501		.505	mg/L	101	80	120			
L66691-04MS	MS	07/08/21 1:08	II210622-2	.501	U	.51	mg/L	102	75	125			
L66691-04MSD	MSD	07/08/21 1:11	II210622-2	.501	U	.506	mg/L	101	75	125	1	20	
L66691-06DUP	DUP	07/08/21 1:23			U	U	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.983	mg/L	99	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.06	0.06			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.06	0.06			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	.501		.502	mg/L	100	80	120			
L66692-11DUP	DUP	07/12/21 18:36			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	.501	U	.499	mg/L	100	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	.501	U	.505	mg/L	101	75	125	1	20	

Molybdenum, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523112													
WG523112ICV	ICV	07/15/21 1:06	II210712-1	2		2	mg/L	100	90	110			
WG523112ICB	ICB	07/15/21 1:10				U	mg/L		-0.06	0.06			
WG522932PBS	PBS	07/15/21 1:33				U	mg/Kg		-6	6			
WG522932LCSS	LCSS	07/15/21 1:37	PCN63584	95.4		96.15	mg/Kg		76.4	114			
WG522932LCSSD	LCSSD	07/15/21 1:41	PCN63584	95.4		92.17	mg/Kg		76.4	114	4	20	
L66692-01MS	MS	07/15/21 1:48	II210708-3	50.1	6	53.36	mg/Kg	95	75	125			
L66692-01MSD	MSD	07/15/21 1:52	II210708-3	50.1	6	62.83	mg/Kg	113	75	125	16	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522782													
WG522782ICV	ICV	07/08/21 20:43	MS210630-2	.05		.05181	mg/L	104	90	110			
WG522782ICB	ICB	07/08/21 20:45				U	mg/L		-0.0012	0.0012			
WG522267PBS	PBS	07/08/21 20:55				U	mg/L		-0.0012	0.0012			
WG522267LFB2	LFB	07/08/21 20:57	MS210702-2	.05		.04989	mg/L	100	80	120			
L66691-05MS	MS	07/08/21 21:02	MS210702-2	.05	.00817	.04902	mg/L	82	75	125			
L66691-05MSD	MSD	07/08/21 21:04	MS210702-2	.05	.00817	.0497	mg/L	83	75	125	1	20	
L66691-06DUP	DUP	07/08/21 21:12			.00046	U	mg/L				200	20	RA
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05124	mg/L	102	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0012	0.0012			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0012	0.0012			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04765	mg/L	95	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	U	.04671	mg/L	93	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	U	.04761	mg/L	95	75	125	2	20	
L66693-11DUP	DUP	07/09/21 16:50			U	.00371	mg/L				200	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.04903	mg/L	98	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0012	0.0012			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0012	0.0012			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05		.0459	mg/L	92	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	.00044	mg/L				200	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05	.00066	.04753	mg/L	94	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05	.00066	.04648	mg/L	92	75	125	2	20	

Nickel, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.05		.0497	mg/L	99	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.0012	0.0012			
WG522932PBS	PBS	07/13/21 19:13				U	mg/Kg		-0.6	0.6			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	53.9		51.59496	mg/Kg		44.5	63.3			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	53.9		47.86583	mg/Kg		44.5	63.3	7	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	24.75	2.5	24.8904	mg/Kg	90	75	125			
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	24.75	2.5	24.69951	mg/Kg	90	75	125	1	20	

pH, Saturated Paste EPA 600/2-78-054 section 3.2.2

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523136													
WG523136ICV	ICV	07/15/21 13:03	PCN63115	4.01		4	units	100	3.9	4.1			
L66691-04DUP	DUP	07/15/21 13:11			7.6	7.66	units				1	20	
WG523349													
L66692-05DUP	DUP	07/15/21 18:25			7.7	7.73	units				0	20	
WG523349ICV	ICV	07/15/21 19:54	PCN63115	4.01		4	units	100	3.9	4.1			

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Selenium (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522782													
WG522782ICV	ICV	07/08/21 20:43	MS210630-2	.05		.05058	mg/L	101	90	110			
WG522782ICB	ICB	07/08/21 20:45				U	mg/L		-0.0003	0.0003			
WG522267PBS	PBS	07/08/21 20:55				U	mg/L		-0.0003	0.0003			
WG522267LFB2	LFB	07/08/21 20:57	MS210702-2	.05		.04948	mg/L	99	80	120			
L66691-05MS	MS	07/08/21 21:02	MS210702-2	.05	.00013	.05037	mg/L	100	75	125			
L66691-05MSD	MSD	07/08/21 21:04	MS210702-2	.05	.00013	.05097	mg/L	102	75	125	1	20	
L66691-06DUP	DUP	07/08/21 21:12			.00011	U	mg/L				200	20	RA
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05008	mg/L	100	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0003	0.0003			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0003	0.0003			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04828	mg/L	97	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	.00026	.04882	mg/L	97	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	.00026	.04904	mg/L	98	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			.00011	.00011	mg/L				0	20	RA
WG523214													
WG523214ICV	ICV	07/14/21 14:10	MS210630-2	.05		.04927	mg/L	99	90	110			
WG523214ICB	ICB	07/14/21 14:12				.00014	mg/L		-0.0003	0.0003			
WG522409PBS	PBS	07/14/21 14:24				U	mg/L		-0.0003	0.0003			
WG522409LFB2	LFB	07/14/21 14:26	MS210702-2	.05		.04917	mg/L	98	80	120			
L66692-11DUP	DUP	07/14/21 14:30			.00017	.00015	mg/L				13	20	RA
L66692-13MS	MS	07/14/21 14:35	MS210702-2	.05	.00014	.05072	mg/L	101	75	125			
L66692-13MSD	MSD	07/14/21 14:37	MS210702-2	.05	.00014	.05022	mg/L	100	75	125	1	20	

Selenium, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.05		.04968	mg/L	99	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.0003	0.0003			
WG522932PBS	PBS	07/13/21 19:13				.05556	mg/Kg		-0.15	0.15			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	167		163.88042	mg/Kg		132	201			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	167		157.62774	mg/Kg		132	201	4	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	12.375	.209	11.83105	mg/Kg	94	75	125			
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	12.375	.209	11.69361	mg/Kg	93	75	125	1	20	

Solids, Percent D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG521931													
L66692-12DUP	DUP	06/27/21 16:00			99.8	99.8	%				0	20	
WG521931PBS	PBS	06/28/21 10:00				U	%		-0.1	0.1			

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Sulfur, total ASTM D-4239-85C, LECO Furnace

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522162													
WG522162PBS	PBS	06/30/21 11:30				U	%		-0.03	0.03			
WG522162LCSS	LCSS	06/30/21 11:33	PCN61786	4.01		3.53	%	88	80	120			
L66692-11MS	MS	06/30/21 12:13	PCN62544	1.3	U	1.13	%	87	80	120			
L66692-11DUP	DUP	06/30/21 12:16			U	U	%				0	20	RA

Thallium (1312) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522782													
WG522782ICV	ICV	07/08/21 20:43	MS210630-2	.05		.05143	mg/L	103	90	110			
WG522782ICB	ICB	07/08/21 20:45				U	mg/L		-0.0003	0.0003			
WG522267PBS	PBS	07/08/21 20:55				U	mg/L		-0.0003	0.0003			
WG522267LFB2	LFB	07/08/21 20:57	MS210702-2	.05		.04861	mg/L	97	80	120			
L66691-05MS	MS	07/08/21 21:02	MS210702-2	.05	U	.04902	mg/L	98	75	125			
L66691-05MSD	MSD	07/08/21 21:04	MS210702-2	.05	U	.04915	mg/L	98	75	125	0	20	
L66691-06DUP	DUP	07/08/21 21:12			U	U	mg/L				0	20	RA
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05177	mg/L	104	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0003	0.0003			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0003	0.0003			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04758	mg/L	95	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	U	.0475	mg/L	95	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	U	.04778	mg/L	96	75	125	1	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.05062	mg/L	101	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0003	0.0003			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0003	0.0003			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05		.04734	mg/L	95	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	U	mg/L				0	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05	U	.0487	mg/L	97	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05	U	.04784	mg/L	96	75	125	2	20	

Thallium, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523097													
WG523097ICV	ICV	07/13/21 19:02	MS210630-2	.05		.05129	mg/L	103	90	110			
WG523097ICB	ICB	07/13/21 19:03				U	mg/L		-0.0003	0.0003			
WG522932PBS	PBS	07/13/21 19:13				U	mg/Kg		-0.15	0.15			
WG522932LCSS	LCSS	07/13/21 19:14	PCN63584	112		106.99546	mg/Kg		90.3	133			
WG522932LCSSD	LCSSD	07/13/21 19:16	PCN63584	112		103.87663	mg/Kg		90.3	133	3	20	
L66692-14MS	MS	07/13/21 19:54	MS210521-6	24.75	.0624	23.12587	mg/Kg	93	75	125			
L66692-14MSD	MSD	07/13/21 19:55	MS210521-6	24.75	.0624	23.38935	mg/Kg	94	75	125	1	20	

Hudbay Minerals

ACZ Project ID: ***L66692***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Zinc (1312) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		1.986	mg/L	99	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.06	0.06			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.06	0.06			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	.50075		.51	mg/L	102	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	.50075	U	.508	mg/L	101	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	.50075	U	.503	mg/L	100	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522593													
WG522593ICV	ICV	07/08/21 0:29	II210620-2	2		2.014	mg/L	101	90	110			
WG522593ICB	ICB	07/08/21 0:33				U	mg/L		-0.06	0.06			
WG522267PBS	PBS	07/08/21 0:56				U	mg/L		-0.06	0.06			
WG522267LFB1	LFB	07/08/21 1:00	II210622-2	.50075		.518	mg/L	103	80	120			
L66691-04MS	MS	07/08/21 1:08	II210622-2	.50075	U	.516	mg/L	103	75	125			
L66691-04MSD	MSD	07/08/21 1:11	II210622-2	.50075	U	.524	mg/L	105	75	125	2	20	
L66691-06DUP	DUP	07/08/21 1:23			U	U	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.958	mg/L	98	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.06	0.06			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.06	0.06			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	.50075		.486	mg/L	97	80	120			
L66692-11DUP	DUP	07/12/21 18:36			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	.50075	U	.486	mg/L	97	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	.50075	U	.487	mg/L	97	75	125	0	20	

Zinc, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523112													
WG523112ICV	ICV	07/15/21 1:06	II210712-1	2		1.99	mg/L	100	90	110			
WG523112ICB	ICB	07/15/21 1:10				U	mg/L		-0.06	0.06			
WG522932PBS	PBS	07/15/21 1:33				U	mg/Kg		-6	6			
WG522932LCSS	LCSS	07/15/21 1:37	PCN63584	158		155.4	mg/Kg		128	188			
WG522932LCSSD	LCSSD	07/15/21 1:41	PCN63584	158		155.2	mg/Kg		128	188	0	20	
L66692-01MS	MS	07/15/21 1:48	II210708-3	50.045	47.9	111.4	mg/Kg	127	75	125			M1
L66692-01MSD	MSD	07/15/21 1:52	II210708-3	50.045	47.9	115.7	mg/Kg	135	75	125	4	20	M1

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-01	WG522593	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522782	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522782	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522817	Copper (1312)	M6020B ICP-MS	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M6020B ICP-MS	N1	See Case Narrative.
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522593	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522817	Lead (1312)	M6020B ICP-MS	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG522593	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522593	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522782	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522782	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522593	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-02	WG522593	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522782	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522782	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522817	Copper (1312)	M6020B ICP-MS	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M6020B ICP-MS	N1	See Case Narrative.
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522593	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522817	Lead (1312)	M6020B ICP-MS	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG522593	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522593	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522782	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522782	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522593	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-03	WG522593	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522782	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522782	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523454	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522817	Copper (1312)	M6020B ICP-MS	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M6020B ICP-MS	N1	See Case Narrative.
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522593	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522817	Lead (1312)	M6020B ICP-MS	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG522593	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522593	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522782	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522782	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522593	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-04	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					or LFB) was acceptable.
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-05	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523454	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					or LFB) was acceptable.
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-06	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					or LFB) was acceptable.
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-07	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-08	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-09	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-10	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522985	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-11	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523097	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					or LFB) was acceptable.
	WG523377	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-12	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					or LFB) was acceptable.
	WG523377	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-13	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523097	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG523377	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-14	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS

Hudbay Minerals

ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					or LFB) was acceptable.
	WG523377	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66692-15	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523097	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Calcium, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG522160	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523199	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523112	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523296	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte

Hudbay Minerals ACZ Project ID: ***L66692***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523377	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Molybdenum, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522162	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523112	Zinc, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

Hudbay Minerals ACZ Project ID: ***L66692***

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Selenium (1312)	M6020B ICP-MS
Selenium, total (3050)	M6020B ICP-MS

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
Conductivity @25C	SM2510B
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2
Solids, Percent	D2216-80
Sulfur, total	ASTM D-4239-85C, LECO Furnace
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
Conductivity @25C	SM2510B
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2
Solids, Percent	D2216-80
Sulfur, total	ASTM D-4239-85C, LECO Furnace

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Hudbay Minerals

ACZ Project ID: L66692
Date Received: 06/23/2021 15:35
Received By:
Date Printed: 6/24/2021

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA35314	22.7	NA	15	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Hudbay Minerals

ACZ Project ID:	L66692
Date Received:	06/23/2021 15:35
Received By:	
Date Printed:	6/24/2021

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L66692

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Holly Beggy
Company: Hudbay Minerals
E-mail: holly.beggy@hudbayminerals.com
Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-343-5174

Copy of Report to:

Name: David Krizek
Company: david.krizek@hudbayminerals.com
E-mail: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3527

Invoice to:

Name: Lionelyn Garcia
Company: Hudbay Minerals
E-mail: rosemontinvoices@hudbayminerals.com
Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3545

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Corey Arcnor **Sampler's Site Information** State AZ Zip code 85629 Time Zone AZ

***Sampler's Signature:** [signature]

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: 2021-SOILS
PO#:
Reporting state for compliance testing: No
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Drainage-1 (Under Plant)	Drainage 1-2-3-4	Ina Road WWTP-Soil	Plant Tissue				
D4a-8	6/7/21 : 8:52am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4a-9	6/7/21 : 9:02am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4a-10	6/7/21 : 9:12am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4a-11	6/7/21 : 9:53am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4a-12	6/7/21 : 9:12am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-7	6/7/21 : 6:34am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-8	6/7/21 : 7:01am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-9	6/7/21 : 7:22am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-10	6/7/21 : 7:44am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-11	6/7/21 : 8:23am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Samples have been sieved to 4mm with a #5 sieve.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Corey Arcnor [signature]	6/21/21 3:05	Holly Beggy [signature]	6/9/21, 3:05pm
Holly Beggy [signature]	6/21/21, 2:40pm		6/23/21 15:35

FRMAD050.06.14.14 White - Return with sample. Yellow - Retain for your records.

L66692 Chain of Custod

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Holly Beggy
Company: Hudbay Minerals
E-mail: holly.beggy@hudbayminerals.com
Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-343-5174

Copy of Report to:

Name: David Krizek
Company: david.krizek@hudbayminerals.com
E-mail: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3527

Invoice to:

Name: Lionelyn Garcia
Company: Hudbay Minerals
E-mail: rosemontinvoices@hudbayminerals.com
Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3545

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: _____ **Sampler's Site Information** **State** AZ **Zip code** 85629 **Time Zone** AZ

***Sampler's Signature:** _____

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: 2021-SOILS
PO#:
Reporting state for compliance testing: No
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Drainage-1 (Under Plant)	Drainage 1-2-3-4	Ina Road WWTP-Soil	Plant Tissue				
D4b-12	6/8/21 : 5:56am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-13	6/8/21 : 6:24am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-14	6/8/21 : 8:18am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-15	6/8/21 : 8:42am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
D4b-16	6/8/21 : 7:44am	SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		SO	1	[ ]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		SO	1	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		SO	1	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		SO	1	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
		SO	1	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Samples have been sieved to 4mm with a #5 sieve.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Corey Archer	6/9/21 3:05	Holly Beggy	6/9/21, 3:05pm
Holly Beggy	6/21/21, 2:40pm		

FRMAD050.06.14.14 White - Return with sample. Yellow - Retain for your records.